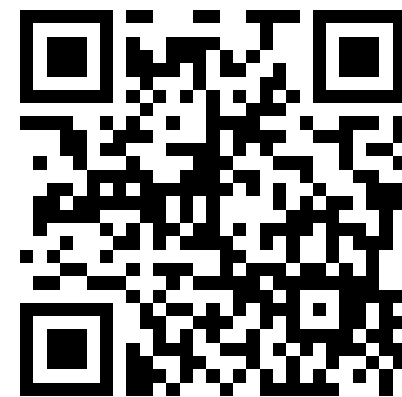
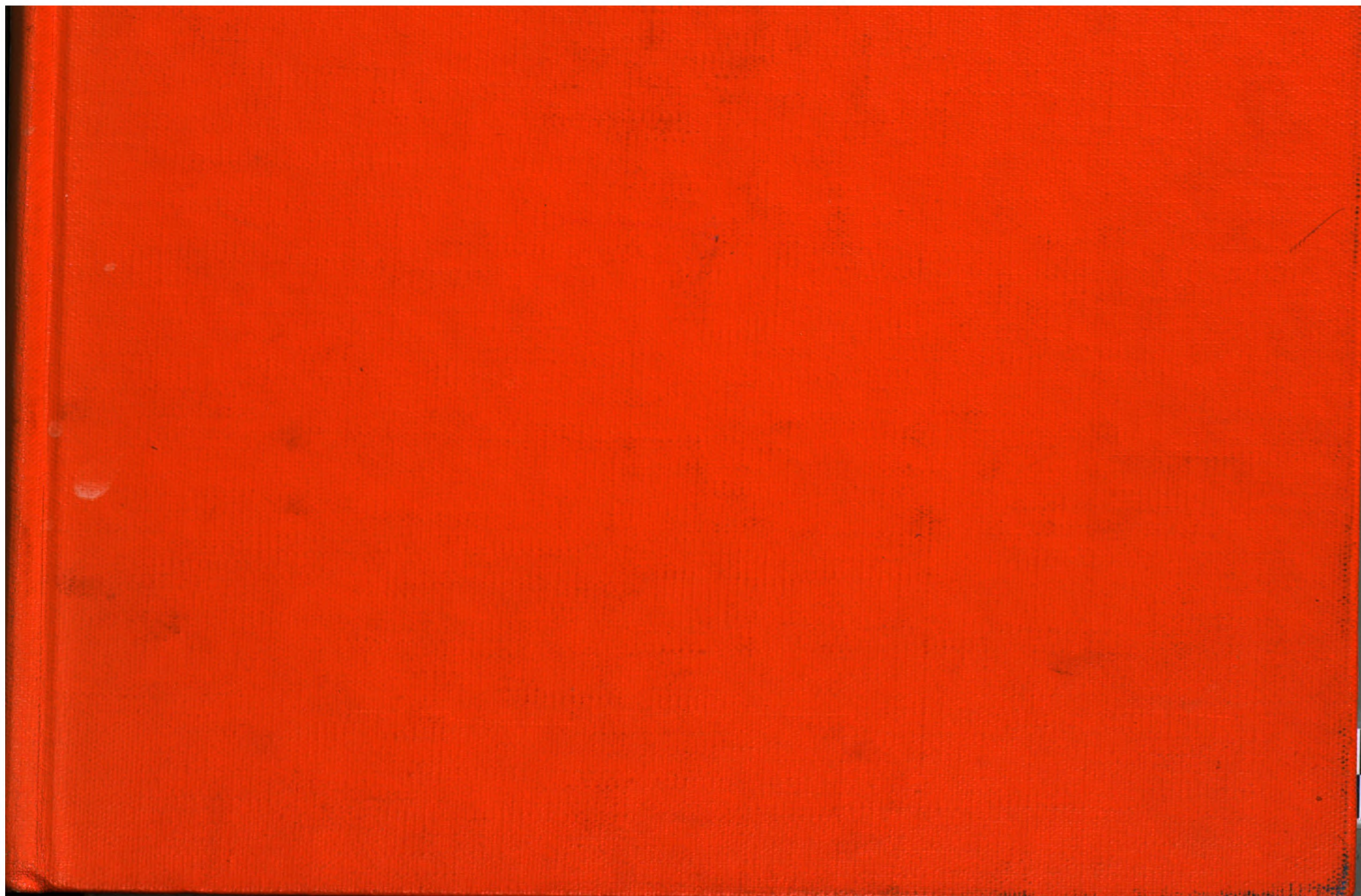

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REPORT
ON THE
NORTHERN TERRITORIES
OF THE
GOLD COAST.

COMPILED BY THE LATE
LIEUT.-COLONEL H. P. NORTHCOTT, C.B.,
Leinster Regiment,

FROM REPORTS FURNISHED BY OFFICERS OF THE
ADMINISTRATION.

INTELLIGENCE DIVISION, WAR
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PREFACE.

This compilation is intended for the information and guidance of officials concerned in the administration of the Northern Territories. The reports on which it is based were furnished by hard-worked officers in the scanty leisure of a time of pressure; and if the compilation can be regarded merely as a guide and a stimulus to further effort, the fault lies more with lack of time and opportunity than with the zeal and intelligence of the officers concerned in the collection of information. These were:—Lieut. Colonel Walker, Scottish Rifles (Wa, Hole, Gurunai, and Dagarti); Lieut.-Colonel Honourable C. G. Fortescue, Rifle Brigade (Mamprusi); Lieut.-Colonel Giffard, Welsh Regiment (Moshi), and Captain Anderson, 15th Hussars (Daboya). Dagomba full to me. The incompleteness of the work as a *précis* of information is acknowledged, but it is so important to officers engaged on administrative duties to be aware of native customs and prejudices, that I consider it advisable not to await a more elaborate record, but to place at their disposal notes that I have found of value myself.

I am indebted for the chapter on Sport and Natural History to Lieut.-Colonel Giffard, whose experience in other parts of Africa lends a special value to his contribution.

H. P. N.

19th September, 1899.

REPORT ON THE NORTHERN TERRITORIES OF THE GOLD COAST.

CHAPTER I.—GEOGRAPHY.

"THE Northern Territories of the Gold Coast" is the name given (1897) to that portion of the Gold Coast Protectorate which lies "to the north of Ashanti proper." As "Ashanti proper" has never been officially defined, the southern boundary of the Northern Territories cannot be accurately described, but in practice Kintampo is accepted as the most southerly place of any importance in which the Administrator exercises jurisdiction. On the west the frontier is formed by the Black Volta river, and on the north by the 11th parallel of north latitude, as described in the Anglo-French Convention of the 14th June, 1898, which is reprinted in Appendix A. On the east no final frontier* has yet been accepted, but a provisional boundary between the British and German spheres is formed by the Neutral Zone, and by a line running due north and south between 10° and 11° of north latitude through a small village called Morosugu. Boundaries.

A map attached, marked X, shows the boundaries* of the Northern Territories as nearly as they can be indicated in the present state of our knowledge of the country.

The area of the Northern Territories is approximately 88,000 square miles, but a considerable addition to this may be expected when a settlement is reached with regard to the division of the Neutral Zone between Great Britain and Germany. Area.

The Northern Territories lie wholly outside the belt of forest that stretches inwards from the coast for about 200 miles. They may be generally described as a gently undulating plateau, rising gradually northward from Kintampo, and ending abruptly in a sheer scarp running almost east and west from the provisional eastern boundary to Sobelli, and passing about four miles to the north of Gambaga. It faces north and falls very steeply about 700 feet, but between Walewale and Zankwana there is a break in its continuity, admitting of the

* Since this account was compiled a Convention has been signed between Great Britain and Germany defining the eastern frontier. (vide Appendix F). Description of the country.

passage of the White Volta river. Marked as is this natural feature, it has no significance as a political frontier among the natives, although there seems to be a difference in the climatic conditions north and south of the scarp that exercises considerable influence on the life, agriculture, and occupations of the inhabitants.

North of the scarp is another plateau of a character similar to that already described, but in this the easy undulations are frequently uplifted into definite hills of from 100 to 500 feet in height, sometimes isolated, and sometimes gathered into small groups or inconsiderable ranges.

vegetation.

The whole of this area is covered with coarse, rank grass, that often attains a height of over 7 feet in circumstances favourable to its growth. During the rainy season, and afterwards until burned off in December and January, this thick grass forms a serious impediment to free movement, and in places it is toilsome to press a passage through it even along the narrow tracks that serve as native roads. In the lower levels, where the growth is coarser than elsewhere, and where the presence of moisture preserves in it a certain amount of vitality, the bush fires lose much of their destructive effect, and a barrier remains throughout the year.

From this tangle there rises a scrub of dwarfed and shadeless trees, spaced like those of some straggling and neglected orchard, and not exceeding them in height. The distribution of this scrub is fairly uniform, but north of the scarp it thins perceptibly. On the other hand, on the banks of the larger rivers, it gives place to thin belts of woodland, where handsome trees spring from a mass of the matted undergrowth characteristic of the southern forest.

It is probable that the absence of large trees from the uplands is due to the action of the annual bush fires. That it is not entirely due to considerations of soil and water is evident from the fact that nearly every village, whatever may be its situation, reckons among its possessions a "shade-tree," where are held the market and the village parliament, and where the weaver plies his loom. These trees are either baobab, cotton, or one of two—known to the Hausas as *kinta* and *pisee*—characterised by a compact growth of dark and glossy leaves, and in the latter by a handsome bright red fruit.

The trees that persist in their growth in spite of the withering fire that attacks them every year are, with the exception of shea-butter trees, of no use except as fuel. They include acacias, which here, as in South Africa, appear to suffer little from the burning grass, and a species, name unknown, very uniformly distributed, of irregular and unprepossessing outline, and bearing long and rather fleshy leaves, so scanty that they furnish no protection from the sun. In close proximity to the watercourses are to be found groves of bamboos, and at infrequent intervals well-proportioned trees of handsome foliage. One species in particular attracts attention from its full growth of glossy leaves, covered in late spring

with a profusion of white flowers that give it, at a distance, the appearance of a horse-chestnut, but a close inspection of its leaves and flower disposes of all real similarity. In conjunction with this tree there is generally to be found a creeping plant of robust habit bearing a prolific crop of white blossoms resembling those of the jasmine, but many times enlarged. Laburnums, with specially fine clusters of bloom, are also seen, but they are rare. With these exceptions, the country is a disappointment in respect of beautiful flowers. Arums of a particularly unattractive nature and of greenish hue grow freely in moist places, and are associated with a purple ground orchid and a marsh plant with yellow blossoms. Water lilies are common, but have no particular charm, and the only handsome lily met with, bearing heavy trusses of pure white bell-like flowers, was encountered on the march when circumstances prevented the acquisition of bulbs.

Not only do the grass and scrub set up a physical obstacle to travel, and, by interfering with the circulation of the air, add to its discomforts, but they induce a feeling of acute depression by limiting the range of vision to a few yards on either side of the road. In those rare cases, however, where an extensive view can be obtained, the prospect is tame and monotonous. It reveals a dull expanse of tree-tops, broken only by minor hills, and possesses as its only charm the soft and hazy colouring that distance always lends. The great rivers, notably the Black Volta, are, indeed, generally beautiful when in half-flood, but for the greater part of the year they are gaunt and gaping watercourses with alternate pools and ugly sandpits strewn with derelict tree trunks.

The main water system of the country runs generally from north to south, and is formed by the Black Volta and White Volta rivers, which effect a junction near Debre. The former has no important affluents, and the latter only one—the Kulpawn. These rivers carry running water all the year round, but at the end of January their streams shrink to modest dimensions, and, above Debre, both branches of the Volta are fordable in many places. In the rains they freely overflow their banks, and for four months of the year they are noble streams, over 150 yards in breadth and 30 feet in depth, with rapid currents, offering long stretches of navigable water as an economical means of transport. With the exception of some small mountain streams that maintain their flow without interruption, the other rivers are little better than surface drains on an exaggerated scale. Filling very rapidly after rain, they are often for a time impassable to ordinary traffic, but they subside as quickly, and for months together are either dry or degenerate into paltry reservoirs of unwholesome water.

In many parts of the country the villagers suffer severely from the scantiness of the water supply from March to June or July. During these months good water is very difficult to obtain, and in Dagomba especially, where the water-holes are few and far between, great privations are endured. At Gwimeo,

for example, in March, 1898, the inhabitants were compelled to go eight miles to fill their pots, and at Zandua in April of the same year the only source of supply was a favourite wallow of buffalo, which lent a flavour that neither tea nor rum could dominate.

The bulk of the enormous masses of water that fall during the rainy months of the year runs off at once, and the natural stores left in holes and swampy depressions soon yield to the evaporating force of a vertical sun. The natives are not skilled in making wells, but it would seem from a few isolated experiments that these would in some instances solve the difficulty at present experienced in guaranteeing a constant supply.

Boats.

The only form of boat in use in the Northern Territories is a primitive "dug-out" canoe, generally made from the trunk of a cotton tree, and propelled with rough paddles, in which no traces is discernible of the graceful pattern and elaborate ornamentation sometimes found on the coast. In the upper reaches of the White Volta River canoes are unknown, but at Yariba and Daboya, and near Bole on the Black Volta River, they are in common use as ferry-boats, and below Daboya they are sometimes employed by the more adventurous native traders as a means of transport for their goods. In the absence of bridges and boats the people of Mamprusi have become bold and expert swimmers, and do not hesitate to cross the largest rivers in full flood, pushing before them calabashes laden with country produce, or sustaining a member of the softer sex, whose timidity or want of practice reduces her to such dependence. That this enterprise is due to the pressure of necessity is obvious from the appreciation shown for canoes made under European supervision at Gambaga and Zongoiri, the natives willingly paying a small charge for ferry service over the Volta between those places.

The survey of the large rivers is still incomplete, and it is therefore impossible to define with certainty their capabilities for transport, but there can be no doubt that, as the country is developed, a demand will arise for some more speedy and economical means of carriage than is furnished by the native porter, and that some advantage at least will be taken of the natural waterways that offer themselves throughout the rainy season.

Surface formations.

The basis of the soil is sandstone, covered, in the lower levels, with a thin layer of alluvial deposit. In the scarp, and in the hills generally, the sandstone occurs in large blocks or in thinly laminated strata, but whereas in the former these formations are almost horizontal, in the latter they are in many instances tilted vertically. Granite and quartz are found associated with the hills, but are more common in the Lobi country than within our present frontiers. Iron enters largely into the composition of some of the rocks, and laterite crops up persistently.

No fossils were discovered.

Maps.

The map of the Northern Territories owes its outline to the astronomical observations and road traverses of the late

Mr. Ferguson, whose work has been of the utmost value to all who have had to travel in the country. The officers of the Administration have, during the year 1898, added a few observations for latitude and many hundreds of miles of road traverse to the existing information, and the position of every town and village of importance has been fixed with fair accuracy.

The limits of the administrative districts and sub-districts have been made to correspond as closely as possible with tribal boundaries, and the native names have in all cases been retained for sub-districts.

CHAPTER II.—HISTORY—GOVERNMENT—LAWS—PUNISHMENTS.

Introductory.

THE natives of the Northern Territories do not possess any written records, and there is among them no class whose business it is to transmit tradition orally. It is, consequently, difficult to obtain trustworthy information with regard to events of which the narrator was not an eye-witness, and the value of any item of significance so peculiar as to have resound from the general oblivion is greatly discounted by the inability of the historian to assign even an approximate date as to its occurrence. The following paragraphs must, therefore, not be accepted as being either accurate or complete, but rather as a fragmentary and insecure basis for future inquiry.

Mamprusi.

The kingdoms of Moshi, Mamprusi, and Dagomba appear to have been founded almost simultaneously. According to the most trustworthy accounts, an unsuccessful attempt on the part of one Tosogo to wrest the rule of a province of Gurnu, near Say, from his brother led him, about the beginning of this century, to migrate westwards with his following. Arriving in Mamprusi, Tosogo speedily made himself master of the country, the former inhabitants either submitting to his rule or escaping into what is now known as the Frafra sub-district. No sooner had he established himself in Mamprusi than Tosogo, who appears to have been a man with large ambitions, turned his attention to Moshi and Dagomba, and, having conquered them, created out of them kingdoms for his nephew and brother respectively. He then proceeded to extend the borders of Mamprusi, and when he died the kingdom included the whole of Chakosi, Mamprusi, and Gurunsi. There are, indeed, traditions in Mamprusi that the adventurous spirit of Tosogo led him to organise an expedition against the powerful and distant kingdom of Ashanti. In the struggle that ensued the Mamprusis are said to have held their own, but to have been unable to reap any rewards of their prowess. To have penetrated so far south was, however, in itself no mean feat, and the king took care to bring back with him two drum-sticks of the kola tree, in order to silence any scepticism as to the real extent of his adventure. A successor of Tosogo, Tampuli by name, is said to have gained a decisive victory over the tribes settled on the Komoe River; but, as this did not result in any territorial annexation, it may be regarded as a special slaving raid on a large scale, the usual fields of activity for these captures being Wa and Gurnusi. The military history

of Mamprusi closes with an unsuccessful expedition against Daboya about 40 years ago, in the reign of King Napari. Since then the spirit of adventure seems to have deserted the Mamprusi dynasty, and the people have applied themselves to agricultural pursuits and to levying toll on the trade passing through the two important towns, Gambaga and Walewale. The prestige of the victories gained by the earlier kings sufficed, however, to maintain the authority of the royal house over even the most distant provinces, and reference was made to the king for confirmation of the election of chiefs, questions involving an appeal to arms were submitted to him for decision, and demands on his part for tribute and personal service were obeyed. An instance of the existence of this power within recent years is supplied by the defences erected round Naliengu when the present king, Yamusa, migrated there from Gambaga. These consisted of a parapet and ditch encircling the village, out of arrow range, and the work was performed entirely by Gurnusi in conformity with the feudal tenure of their land. It was not until about 20 years ago that anything occurred to disturb the peaceful relations existing between the King of Mamprusi and his subjects, but since then the constant depredations of native freebooters, such as Samory, Babatu, and Amrabi, and the blandishments of the representatives of rival European Powers have furnished the excuses of fear and self-interest for withholding his due from the suzerain, and have in some instances led to a repudiation of his authority. An example of the latter is to be found in the Chief of Sansanne Mango, who has, since the occupation of his town by the Germans, affected an independence to which he never previously laid claim. It is, however, noteworthy that all the chiefs interrogated in the Frafra sub-district and in Gurnusi frankly acknowledged their allegiance to the King of Mamprusi, and declared that the formalities of subjection were only held in abeyance, and were not abolished, by the temporary disturbance of the political equilibrium in their countries. On the death of the king, he is succeeded by his eldest surviving brother. Failing brothers, the oldest son has the first claim to the throne.

It is, perhaps, worth while to refer here briefly to the circumstances that enable an obscure individual, without political influence, to achieve a mushroom growth as a powerful free-lance, and to remain for years a standing menace to the peace and prosperity of the most important kingdoms. A solution of this problem is to be found in the poverty of the potentates in the country under discussion, and in their consequent inability to maintain a standing army. In the case of an invasion of the country the king has and exercises the power of ordering a *levée en masse*, but the necessities of supply do not admit of a protracted struggle, and the result of a pitched battle is that the commonalty return at once to their ordinary avocations, accepting with more or less resignation the rule of the victor. It is true that, when the coffers of a powerful king are empty, he will organise a slave-raiding expedition into his

Native
freebooters.

neighbour's territory, but for this purpose he will detail the fighting contingent of a particular district, and will so arrange the time of its descent as not to interfere with his own harvest, while it will remain in foreign territory no longer than its granaries will furnish support for the expeditionary force and its captures. There exists no body of men kept in a condition of military efficiency, ready to be applied at any threatened point, and an outlying town or district is therefore at the mercy of any adventurer strong and skilful enough to strike a sudden blow.

With the adventurer the case is entirely different. An ambitious temperament enables him to become the leading personage in the village in which he has been reared, and he uses this position to procure for himself a horse, gun, and ammunition, the necessary properties for the part he proposes to play. With the assistance of such lawless spirits as he can attract by the promise of loot, he leads his villagers against a neighbouring community, effaces its adult males, and disposes of the women and children partly in rewards for his adherents, and partly in the nearest slave market. A few successes of this nature not only establish his reputation and attract followers to his banner, but give him the wherewithal to furnish them with guns, and to undertake enterprises of greater magnitude. Once embarked on this career, the difficulty of maintaining his routine compels him to change his quarters at frequent intervals, and he lives a life of constant fighting and plunder, ended only by his death or by his settling down in the place of some important chief whom he has ousted from his possessions. It is true that the arch-freebooter, Samory, endeavoured to maintain himself in one spot by employing his numerous slaves in growing crops, but in spite of his resources, and in spite of the genius with which he directed them, the attempt was a failure, and, his forces weakened by famine and by sickness due to privation, he was always irresistibly driven to fresh enterprises in order to provide sustenance for his army.

Moshi.

The kingdom of Moshi has been handed over to the French, and its history ceases to concern an account of the Northern Territories, but it is interesting to note that the respect due to the parent dynasty of Mamprusi was, until the arrival of the French at Wagadugu, kept alive by a yearly present of horses, slaves, and clothing, and by the necessity of having the election of a new king confirmed by the King of Mamprusi. Similar tokens of respect were also paid to the court of Nalierigu by that of Yendi, but in neither case was the gift intended as tribute, the independence of both Moshi and Dagomba being fully recognised. The three dynasties appear to have always maintained the most friendly feelings towards each other, and two generations ago the sovereigns of Mamprusi and Moshi entered into an agreement intended to prevent the conquest of either kingdom by the other. Each swore a solemn oath, binding on their descendants, that the king of neither country would enter the capital of the other, and the terms of the oath

involved a transgressor in certain and violent death. That this was regarded as more than an empty form is evident from the fact that the King of Moshi, when a refugee from the French in 1898 and harbouring in Mamprusi, steadily refused to enter either Gambaga or Nalierigu, respectively the old and the new capitals, even though by doing so he would have been in much greater security.

An example, too, of the respect paid by the 'Dagombas to the King of Mamprusi is of recent date. A few years ago a chief in the northern portion of Mamprusi defied the authority of the king, who, in apparent distrust of the efficiency of his own levy, called upon the King of Yendi for assistance. This was readily promised, and a contingent had actually been assembled when the arrival of English troops at Gambaga diverted attention from the expedition, and eventually rendered it unnecessary.

In Moshi the son inherits the kingdom, and in default of sons the king's brother succeeds him.

Dagomba lies almost entirely within the Neutral Zone,* and it is therefore far from easy to obtain authoritative details of its history, but the information available seems to indicate that it has been uneventful. Apart from slave raids into Daboya and Gurnusi, in some of which the assailants came off second best, the only recorded external war is one with the Chief of Salaga. The issue is described as doubtful, but the campaign is redeemed from dullness by the conduct of a giant Dagomba chief named Bamveni, who, rallying his followers when they were recoiling before the onslaught of the enemy, hurled his spear with such force that the head was completely imbedded in a tree. Fired by this evidence of heroic strength, the Dagombas returned once more to the charge and turned the tide of battle in their favour. The tree is still an object of veneration to the present generation.

Dagomba.

The succession to the throne of Dagomba is through the sons. A ceremony is described as governing the choice of sons for the kingship, which, if it really takes place, leaves the selection in the hands of the priesthood. It appears that a stick, the fetish of the chief who ruled in Dagomba before the advent of the present dynasty, is deposited in a temple at Gwagolaga, a village near Yendi. On an election becoming imminent, other sticks to equal the number of claimants to the throne are put with it. The competitors are then introduced one by one in order of seniority, and the one that chooses the fetish stick is hailed as king, subject to confirmation of the election by the King of Mamprusi. On this being granted, the new sovereign sends the King of Mamprusi a present of a horse, a horse boy, a girl, and a sword. There is then a month's feasting and relaxation of all moral restraints, and for the same period the king may confiscate all stock and merchandise in transit through his kingdom.

The kingdoms of Figa, Karaga, and Savelugu are allowed

* Vide Appendix F.

a certain amount of independence, and the heir apparent to the throne is generally put on the stool of the first.

Wa.

The history of the kingdoms of Wa, Bole, and Daboya appears to be bound up with that of a kingdom of Yabum, of which no trace remains. The only place of the name now in existence is a small village on the Mamprusi - Daboya boundary, and not only does this present no indication of past importance, but the inhospitable nature of the soil in its vicinity almost forbids the supposition that it gave shelter to a large population. However this may be, the tradition lingers that the King of Yabum was sufficiently powerful to appoint rulers from his own court over the inhabitants of Wa and Bole, who were composed of immigrants from Kong superimposed on a scanty population of unknown denomination. Almost from the foundation of his rule, the King of Wa was engaged in hostilities with the Dagartis, and he succeeded in retaining the mastery over them until 1897, when his truckling to Samory led to a declaration by the Dagartis of their independence, which has now been accepted as an accomplished fact.

His inability to check the advance of Samory also cost the King of Wa the small province of Dumman, which declared its independence in 1898.

Bole.

The Kings of Bole are, as already stated, descendants of the King of Yabum, but the date of the foundation of the dynasty is not forthcoming. The first recorded event of importance is the invasion of Bole by an army of Ashantis under Isanwa Kwanta, resulting in the exaction by the latter of an annual tribute of slaves. It is probably the pressure of this exaction that led the King of Bole to invade Dagarti about the year 1868, but the venture was unsuccessful. About 15 years ago a quarrel arose between the King of Bole and the King of Yabum; the result of this was the death of the latter, and, it is presumed from negative evidence, the extinction of the dynasty. No other event of importance is recorded until the whole of Bole was overrun in 1895 by Samory, whose methods are plainly traceable now in ruined towns and tenantless pastures.

In Wa and Bole the sovereignty devolves upon the next brother; failing survivors, on the eldest son.

Daboya.

The kingdom of Daboya owes its origin to the fear of the Dagombas entertained by the King of Bole about 65 years ago. With a view to screening his subjects from the constant raids of their neighbours, he despatched his son Jakwa to build a town on the White Volta River, and to found a State that would serve as a protective buffer. The new colony must have speedily taken root, for when, four years later, Abdulai, King of Yendi, sent a formidable force against it, it was enabled to repel this with such success that the attempt was never repeated. In spite of this victory the King of Daboya did not feel himself strong enough to refuse a demand made by the King of Ashanti about 1872 for 1,500 slaves. However, rather than carry out

the tyrannical order, he determined to sacrifice himself, and inviting the Ashanti envoys to a house that had been previously mined, and in which he and his wives had installed themselves in regal state, the whole party were blown to atoms. It is an unsuspected result of the expedition led by Sir Garnet Wolseley against Kumassi that this act of heroic self-sacrifice remained unpunished. Since that time the kingdom of Daboya has enjoyed immunity from foreign interference until the approach of Samory's hordes led to a temporary migration of the principal personages to Dagomba, whence they speedily returned on the appearance of our troops at Bona. In the country itself, however, the authority of the king has been frequently called in question, and civil war has been waged no fewer than five times, though the natural succession has been maintained unchanged, and a descendant of Jakwa now rules at Daboya.

No authentic information is forthcoming as to the history of the tribes in the extreme south of the Northern Territories.

In Daboya the heir-apparent to the throne is the eldest son of the next brother, and must always be a nephew.

In listening to the native accounts of their tribal traditions, perhaps the most remarkable fact is the constant reference to the far-reaching power possessed by the kings of Ashanti before they suffered their first reverse at our hands. Their slave-catching area extended to Gurunai, and the intermediate countries were content to buy immunity from indiscriminate raiding by the punctual payment of an annual toll of human beings. In other directions, too, the influence of the court of Kumassi was felt, and, though the revolting atrocities of human sacrifice were not in any instance imitated, in other respects the court ceremonial was accepted as a model, and a graduate in the priestly mysteries of Ashanti was always a *person grata* with the northern rulers. The reputation for invincibility enjoyed by the Ashantis, founded on their success in several important expeditions, and fostered by these priestly agents, was finally dissipated by the results of the expedition of 1873-4.

In Dagarti, Gurunai, and Frafra there is no central form of Government. It is true that until very recent times the inhabitants recognised a paramount power, to which they appealed for confirmation of their choice of minor chiefs and for protection against invasion, but the different townships held aloof from one another and concerted action was unknown among them. Each village has its headman, and a group of these will combine for purposes of self-defence, and will accept the most important among them as their representative in inter-tribal disputes, and as their leader in case of war. In other matters the authority of the chief is very limited, and its exercise is often called in question. It is this want of concentration that has rendered the inhabitants of these districts an easy prey to the slave-raider, and this liability to constant attack has made them suspicious and averse to any communication with strangers, an isolation that has kept them at a lower level than

(5880)

that reached by those of their neighbours whose resources have been multiplied by combination under one ruler, and whose horizon has been extended by intercourse with traders from other countries.

In the great kingdoms of which mention has been made a pure despotism, in theory at least, prevails. The king has the power to declare war and make peace, to institute laws, and to dispose of the life and property of his subjects at his pleasure. In practice, however, he seldom exercises these powers without consulting his most important chiefs, and in particular the Imam or Mahomedan high priest resident at the capital, whose opinion is constantly sought. The deference paid to this functionary is, of course, largely due to the sanctity of his office, but it is equally dependent on the fact that he is able to read and write, and that etiquette forbids that any member of the royal family should compass these accomplishments. Having in his hands the entire control of negotiations with foreign potentates, it follows by an easy transition that the Imam becomes the mouthpiece of the king on all domestic affairs of importance, and it is generally necessary to propitiate him in order to bring a suit to a successful issue. On the other hand the king himself is constrained to support the Imam lest he should, in revenge for an injury, take advantage of the royal ignorance and imbroil him in a war with his neighbours. The Imam's power is, however, derived directly from the king, and it is impossible for him to conclude any arrangement without the express sanction of his royal master, an omission to obtain which may be held to vitiate any contract. Another permanent official of great but decreasing importance is the commander-in-chief. In the absence of standing armies his functions in time of peace are purely advisory, but he takes executive command in time of war, and is responsible for calling out and assembling the required contingents. In some countries, and notably in Daboya, the king is so little superior in power to his principal chiefs, that affairs of state are conducted by means of a council of which he is president; but in most the final decision rests entirely with the king, who may call in whom he pleases to assist him in reaching his conclusion.

The election of minor chiefs is conducted locally, but the choice must be ratified by the king, who will not, however, consider any application until he has received from the claimant a present proportionate in value to the position he aspires to fill.

Laws.

The administration of justice is vested in the king, who holds an open court every day. Great deference is paid to him on these occasions, the assembly rising on his entrance and retirement, and individuals permitted to address him prostrating themselves at his feet. In Moahi this reverence is repeated several times, and the arms are struck sharply on the ground on each occasion. The effect of these frequent prostrations is plainly visible in the partial flattening of the enormous brass

wristlets affected by all the notables. The courtiers, of which a considerable number surround a king, endeavour to disguise the fact that he is subject to human weaknesses, and a cough, a sneeze, an unusually energetic blowing of the nose or clearing of the throat on the part of the central figure, is drowned in the clamour of his entourage. As the habits of taking snuff by the mouth and of chewing kola-nuts are almost universal, and are provocative of expectoration, the hum of attempted concealment is of frequent occurrence, and the holder of the royal spittoon has a busy time.

The adjustment of minor offences is left to the village chiefs, but a culprit charged with a grave crime is invariably brought before the king, to whom also appeal can be made if the defendant in a small case is dissatisfied with the verdict of the local justice. The power of the king is unlimited, but there has grown up a code of common law based on former decisions that is accepted as closely limiting his discretion in ordinary cases.

Crimes and punishments.

Murder is in all cases punishable with death, and in Daboya an effort is made to assimilate the manner of execution to the fate of his victim. In Dagomba the king has the power of commuting the capital sentence into one of fine, coupled with the sale of the murderer; and this commutation is granted as a matter of course if the relations of a murdered wife intercede for the culprit. Adultery with a king's wife is a capital offence everywhere, and in general the whole of the delinquent's family, his slaves, and his other property are forfeited to the crown. For adultery among commoners compensation is paid to the injured party, and in general both offenders are flogged as well. Rape is punished in the same way. Theft is looked upon everywhere as a most serious crime, and the third conviction is generally punished with death. In Daboya a first offence by a stranger involves the capital sentence, but an inhabitant of the country who steals from his neighbour is only fined. In Dagomba death follows conviction of the theft of a horse or sword, and in Mamprusi pilferings result in the amputation of the offender's hand, and in the case in which they take place in a caravan in his being sold as a slave. Imprisonment, which is close confinement in leg-irons, flogging, and fines are resorted to as punishments for offences of less grave nature, or where extenuating circumstances tend to lessen the gravity of a capital offence. In Moahi the curious custom obtains that a creditor who fails to recover a debt after frequent applications is entitled to kill his debtor without unpleasant consequences to himself. In Dagomba a man may be sold in order that a debt contracted by him may be liquidated, and if he escapes to another country the responsibility devolves upon his brothers, any one of whom may be seized and, with his family, sold into captivity. This punishment of selling a criminal into slavery appears at first sight to be a harsh measure, but the estate of an ordinary native is so meagre that distraint would have no practical value, and the

only satisfactory method of exacting a fine is by disposing of the man himself instead of his possessions. Moreover, the conditions of domestic slavery are so light as to involve no hardship in a peaceful transfer; the real horrors of the slave-trade must be referred to the forcible abduction of marketable women and children, with the inevitable murder of the adult males, and to the long journeys performed by the wretched victims under every circumstance of cruelty and oppression.

Execution of
capital
sentences.

The method of carrying out the capital sentence varies somewhat in different kingdoms. Poison is the medium generally employed on the occasions on which a member of the royal family is condemned to death, and the dose is either administered in secret by a near relative, or it is left to the culprit to swallow it knowingly himself. In the case of an ordinary criminal his head is cut off with a sword, and in Mamprusi his heart is afterwards cut out. In Daboya the throat is cut, and in Dagomba the victim is bound, a knife is passed through his cheeks, and his body is hacked to pieces by four men and left for the vultures to devour. This last indignity can, however, be averted by the payment of a sum of £30 to the treasury on the part of the surviving relations.

CHAPTER III.—RELIGION—EDUCATION— LANGUAGES—SUPERSTITIONS.

THE religions of the inhabitants of the Northern Territories are two—Mahommedanism and Paganism. There is no evidence that the wave of despotism proselytising that originated with the rising of Othman dan Fodio, and received its first check in Borgu, ever spread as far west as Mamprusi or Dagomba. At the present moment Fulbe communities are hardly known south of Moshi, and it is improbable that they will ever be numerous in the Northern Territories, where stock-raising suffers from disadvantages that press less severely in more northern latitudes. It is probable, however, that the ruling caste, which came from a country long exposed to the influence of Mahommedanism, and which is in constant intercourse with Hausa traders who profess its tenets, introduced the cult into the country of its adoption, and has, although surrounded by Pagan populations, kept up its practice without interruption. Its votaries are numerous only in the towns, but it is not uncommon to find the headman of a village a solitary exponent of its teachings. Mahommedanism and Paganism exist side by side without any apparent friction, and religious persecution is unknown, though the Mahommedans are very contemptuous of the intelligence of their less enlightened fellow-countrymen. There is said to be a falling off from the strict injunctions of the Prophet in the system followed, but such formalities as are enjoined by the priesthood are observed with scrupulous exactness. Mosques are to be found in the large capitals, such as Gambaga, Yendi, and Wa, and at such centres schools are established, at which young men are trained in the priestly ritual. The duties of the high-priest are to superintend the education of the aspirants to a religious life and of the children of Mahommedan parents, who are responsible for the attendance of their offspring; to conduct service in the mosques; to maintain law and order in the town; to solemnise marriages; and to act as advisers to the chief temporal power. They are responsible for despatching priests to places the chiefs of which require such spiritual support. The educational syllabus consists of instruction in committing to memory portions of the Koran in the Hausa language, and more rarely in reading and writing the same. In the case of embryo priests, writing is always taught. Some few of the more prominent Imams can both read and write Arabic, but it is doubtful if these accomplishments have not in every case been acquired during absence

Divisions of
religion.

from the Northern Territories, probably on extended pilgrimages. The office of priest is hereditary, and great jealousy is shown towards members of other families who may desire to enter the priesthood. It follows, therefore, that the ultimate success of a member of the privileged class is assured if he leads a clean life and displays intelligence enough to carry him through the curriculum. There are many, however, who are not content with this easy road to their career, and these seek to justify their selection, and to increase their reputation for sanctity, by performing the journey to Moca. As a general rule, their object is not attained for two years, and another is occupied in the return, but the long and wearisome tramp bears ample fruit in the augmented respect with which they are regarded in both the religious and political worlds. This is the more easily understood when it is remembered that it is only a small percentage of those that set out who return to their native country. There is a regular form of ordination for a priest. On the aspirant being passed by the Imam as having attained the required standard of education, his parents are notified of the fact, and they bring the Imam a present of cattle, sheep, kola-nuts, corn, and cowries. If the high priest, who is well aware of the private means of all his flock, is satisfied that the present is commensurate with the parents' wealth, he retains a portion of it, and the remainder is expended in a feast to the poor. He then reads and expounds portions of the Koran, and prayers are offered up for the success of the novice. The latter is then clothed in white, he is given a fez, and a rosary and text from the Koran are presented to him. The ceremony is then complete.

Education among the laity seems to be more general in Dagomba than elsewhere, and in explanation of this it is said that the ruling caste still retain an affection for the Hausa language, which was spoken by their forefathers before migrating, although they adopted the tongue of the Dagombas for every-day use soon after their conquest of the latter's country. Here, as elsewhere, it is not etiquette for any member of the royal family to receive any education whatever.

Paganism.

Paganism is emphatically the religion of the people. In those countries in which Mahomedanism is professed a large proportion of the townsfolk remain unconverted, and in the country districts Paganism is almost universal. In Dagarti and Frafra Mahomedanism is hardly known.

Pagans are very reticent about their religious practices and beliefs, and it was the more difficult to overcome their reluctance to speak on these matters in that the only interpreters available were men of a different faith, and were consequently regarded with suspicion. The little information forthcoming showed that each country had variations of creed, but it was clear that in all of them the gods were satisfied with the blood of the lower animals as propitiative offerings, and that the horrors of human sacrifice, as practised in Ashanti, had no counterpart in the Northern Territories. The priests are consulted as to the

result of any proposed expedition, they are credited with the power of producing rain, they act as doctors, and their assistance is invoked in detecting crime. No special qualifications are laid down for the aspirant to priestly dignity beyond a strict adherence to the easy code of morality that obtains, any lapse from which destroys his reputation, however well established. The casting out of devils is a performance that they are constantly called upon to undertake, but it appears to be a simple one, medicine being administered internally or splashed in the patient's face.

The existence of a supernatural Power is universally believed in, but he is given no definite form, and his only attribute is a punitive one. He is credited with the direct punishment of evil-doers, and it is also believed that he assists the priests in their attempts to discover crime. In Dagarti, and generally in the western provinces of the Territories, the belief is common that thunder is an expression of the anger of the gods Topuli and Kakala, whom the inhabitants worship, and that lightning is their medium for punishment. If a serious offence is committed, and the culprit remains undetected, public prayers are offered up for his destruction, and on the approach of a tornado the priests expose an iron bar and a broom tied together, with the hope that by doing so they are assisting the deity in directing his vengeance towards the right quarter. No explanation of this ceremony is obtainable, but it seems to show an appreciation of the partiality of electricity for iron. It is an undoubted fact that the Dagartis are in great terror of thunder, and that many of them conceal themselves on the approach of a storm, from which it may be inferred that they are not quite easy in their minds as to their past conduct having been above suspicion. Still-born children are generally regarded, except in Daboya, as an indication of the god's displeasure, but it is curious that no reflection is cast upon the parents except in Dagomba, where the mother is looked coldly upon. A repetition of the offence confirms this attitude, and it is then a general practice to mutilate the body of the child, in order to avert the current of ill-luck. In Wa and the neighbouring districts the body is denied the rights of sepulture, and no further notice is taken of the occurrence. In Dagarti, on the appearance of a still-born child, the priest is called in and forces some medicine up the nostrils of the infant. On this treatment failing to produce effect, the body is at once thrown away.

Divine
wrath.

In direct opposition to the feeling of some coast tribes, the Twina appearance of twins is hailed as a happy omen, and as a reward for her fecundity the mother is feasted and made much of by her fellow-villagers. There is, however, in Daboya a superstition that the mark of favour involved in a double birth can only be retained by special exertions on the part of the father, who hastens to carve two sticks in a rough imitation of the human body, and to these he makes offerings of the first fruits of every crop. If he should fail in this duty the children die, but if his wife again presents him with twins,

the first set are considered immune from disaster, and the same set of images are taken to represent the latest arrivals, whose fate is dependent upon the regularity of the father's offerings.

The Pagans do not believe in a future state, and the little evidence available seems to show that they do not possess any theory of the migration of the human soul after death to the lower animals. In Dagomba, the spirit returns on death to the man's fetish, which, as often as not, is an inanimate object. The Dagombas believe in reincarnation of the soul, but the process is confined to the family, the recipient of the disembodied spirit being the nephew or niece, but more generally the grandson, of the original owner. This transfer is recognised by the transmission of physical peculiarities, and by the reproduction of the ancestor's wounds in scars or dimples in the infant's flesh.

Fetich.

Every Pagan has his "fetish" or object of peculiar veneration, to which he makes periodical offering, and on whose assistance he relies in every relation of life. Members of a family have the same fetish, and the wife retains that of her father. Besides the family fetish, there are sometimes tribal or national ones, such, for example, as the tree Daguasu in Gurunsi, and the other tree Kalebi at Zankana, in Dagarti. Kalebi means a pen, and the name is derived from the fact that many years ago a priest from Wa tarried under the tree to write a letter. In front of the tree is a heap of stones, and once a year a feast is held, and they are sprinkled with the blood of bullocks and fowls slaughtered in honour of Kalebi.

The family fetish may be any object, from a stick or stone to a mighty river, but the ones most in favour are leopards, crocodiles, and rivers. No man may molest his fetish, or even be present at its slaughter. If he is rash enough to kill his fetish he himself dies, since he has destroyed the custodian of his soul, but if he is merely a witness of another person performing the act, a week's strict seclusion in his hut will, in Dagomba at least, purge him of his complicity. On the other hand, the fetish takes a lively interest in his *protégés*, as the following statements of a Dagomba will show. It is notorious that no man who takes a river as a fetish is ever drowned, unless he has committed a crime of such gravity that his fetish himself thinks it advisable to interfere and reclaim his spirit. A man whose object of worship is a crocodile is free from some of the inconveniences of travel, for if he finds his progress barred by a flooded river, prayer will induce his tutelary deity to ferry him across unharmed. This phenomenon has, it is said, been frequently witnessed, but it is useless for a man of scanty character to appeal for assistance, and, indeed, the crocodile is often used as an instrument of the gods to punish evil-doers, a mission that agrees as well with his appetite as with his morality. His method of procedure is to outtrap the sinner while bathing, or to seize him from a canoe when crossing a river in company with his friends. It is said that, however crowded the boat may be, the selection made is invariably the

most wicked of the party, but the statement, resting as it does on the evidence of prejudiced survivors, is not altogether convincing. Leopards, again, are extremely solicitous of the welfare of their worshippers, and they have been seen guarding their slumbers from interruption by human enemies. That the Pagans of Dagomba see with the eye of faith many incredible things is certain, and further study of their beliefs would probably result in an interesting contribution to the complex study of fetish.

The Daboya people are singularly tame and unvaried in their objects of worship, which are confined in the family to a small clay ball, and in the tribe to an altar of clay surrounded with a low wall of the same substance.

The following is the procedure adopted by the fetish priest in rain-making. He provides himself with an earthenware bowl filled with Shea-butter and closed with a calabash lid; the meaning of this is not clear. He then takes a calabash full of water and sprinkles the latter in the air by means of a horsehair brush. He then beats the bowl with his right hand. This is repeated three times. He then calls upon his sons to continue the ceremony, which is done until rain falls. The father eats nothing on the day of the opening ceremony, but the sons have need to possess great faith in the weather-wisdom of their sire, for they are compelled to fast until the object sought is attained.

A belief in witchcraft exists, and in Wa the professors of the black art are supposed to kill children by sucking their blood. Their magic enables them to adopt disguises such as the form of a bird, fire, &c., and they can render themselves invisible. It is supposed that the priest can, by striking the ground three times with his sacred stick, identify the witch, who is then flogged and banished from the town.

It is believed that prayer and incantation by a priest will cure sterility, and this condition is so great a reproach to a woman that many visits on this account are made to the priest, who secures a steady income from the fowls that are the recognised accompaniments of the demand for his intervention.

Charms are universally worn, and generally consist of verses from the Koran sewn into skin or leather ornaments. These are valued alike by those who believe in Mahomet and by those who reject his doctrines.

Circumcision is practised by Mahomedans, and is carried out at the age of from three to seven days. It is unknown among the Pagans.

Besides the well-known feasts of the Mahomedans, which they observe punctiliously, harvest festivals are universal among the Pagans. Much food and beer are consumed, and in most districts the ordinary ties are relaxed during the festival days, and promiscuity is freely indulged in by both sexes.

The priests are supported by voluntary contributions, and receive a proportion of beasts offered for sacrifice on important

occasions. Private sacrifice is common and takes the form of sprinkling the domestic altar, consisting of a short clay column, with the blood of a fowl, preferably white, and afterwards docking it with some of the feathers.

Language.

Vocabularies of the languages, with the exception of Hausa, most in use in the Northern Territories are given in Appendix B. It is extremely difficult to obtain competent interpreters for the purpose of compiling lists of words, and these can only be accepted as approximately correct. Hausa is the language of trade and political correspondence, and in all large towns and villages men will be found who speak it fluently. There appear to be many lapses from the pure Hausa spoken at Kano.

Heavenly bodies.

The Dagombas believe that God takes the sun and moon into His keeping when they are not visible on earth, and the same belief exists in Moshi, where it is held that there are two suns working on alternate days. The general belief is that the world is flat, and in Daboya there is a conviction that another race of people live under the earth in a position inaccessible to us. When questioned, the propounders of this theory could give no reason for their assertion, and declined to speculate on how the antipodeans maintained their position head-downwards. In Dagomba the moon is supposed to give birth to a small child every month, and to die herself. An eclipse is held to mean that the sun and moon have met for a palaver, and every available medium for making a noise is called into requisition to break it up. In Daboya they say that the moon dies every month and comes to life again after three days; an eclipse they explain as an attempt on the part of the sun to devour the moon, and three days would elapse before she reappeared if they did not frighten the sun from his meal by creating as much din as possible.

Superstitions.

The following are some tribal superstitions:—

In Daboya an eclipse of the moon is looked upon as a portent of war, and prayers are offered to avert this. Meteors are held to presage the death of a king, and this belief is almost universal.

In Mamprusi a solar eclipse is believed to denote a heavy rainfall, and a lunar eclipse a light one, for the ensuing season. A solar rainbow indicates the approaching death of a chief, a lunar rainbow that of a chief's son. Shooting stars betoken a season of scarcity.

In Moshi an eclipse foretells either war or the death of a big chief. A meteor traversing the heavens from west to east is prophetic of the early death of the king, one from east to west of that of the high-priest.

An unusual number of falling stars are generally taken as an evil omen.

The Mohammedans appear to possess some knowledge of the heavens. The means of ascertaining whether the Pagans are equally learned were wanting.

CHAPTER IV.—POPULATION—TOWNS AND VILLAGES—CUSTOMS, &c.

EXCEPT in the sub-district of Bole, much of which was depopulated during the raids of Samory in 1895-97, the population is pretty evenly distributed in the Northern Territories. There is, however, a very marked difference between the grouping of communities north and south of the great Scarp. To the north the family is the unit, and the compounds are scattered at distances of from a hundred yards to half a mile. The farm surrounds the compound, and each head of family is a law unto himself. It is true that the families of certain districts group themselves into tribal organisations, but the bond is very loose and appears to be operative only in defence or in aggression. A headman or chief is elected to represent the tribe in palavers, but his power is nominal, and does not confer on him any rights over the property of his subjects. It is also true that the tribes acknowledge the suzerainty of the king of some well-known tribe, and refer to him for confirmation of their choice of chiefs. In most cases, however, as in Frafra and in Gurunel, the suzerain and his subjects take but a languid interest in each other. No attempt is made by the former to check the quarrels that break out between the minor chieftains, and which are encouraged by the absence of any natural boundaries between their lands; and, on the other hand, it would be useless for the over-lord to try to raise contingents from among these small communities for any expedition unconnected with their own parochial concerns.

South of the Scarp, and in Wa, the population is collected in towns and villages; these are bound together in administrative districts; and authority over a certain number of districts is centred in a dynasty, the representative of which for the time being is accorded large powers over the lives and property of his subjects.

The sites of towns and villages are chosen with reference chiefly to water supply, but in many cases circumstances have conspired to swell the population of a town to a total far in excess of the capabilities of the pools, and this implies that in a season of drought the water is thick and scarce, and quite unfit for consumption by Europeans in the condition in which the natives use it. They themselves appear to be indifferent to the taste and appearance of their drinking water.

Crops are grown right up to the walls of the houses, and give cover for every kind of insanitary abuse, but separate

Population

Towns and villages.

lards are also cultivated at some distance from the villages, and in these the bulk of the food supply is grown.

There are no towns of great size. Kintampo, Walewale, and Gambaga owe their importance rather to their being situated on trade routes than to the numbers of their inhabitants, and Wa, at one time a centre of activity as the capital of a powerful dynasty, has been shorn of its former glories by its tame surrender to Samory and by the devastations of his warriors.

Daboya is remarkable for a trade in salt, obtained from the neighbouring marshes by a process of evaporation, and this is its chief title to consideration.

The plan of the towns and villages seems to be due to no settled defensive design. Individual fancy dictates the choice of a site, and the huts are generally huddled together, and separated from each other by narrow and irregular intervals. No external defences were observed, except at Nalierigu, the residence of the King of Mamprusi, which is surrounded with a ditch and rampart with a radius of about half a mile. The compounds with flat roofs, such as are found in Frafra, are easily convertible into strong blockhouses, and could be held by small garrisons armed with rifles against native attack so long as ammunition, food, and water hold out.

The natives themselves, however, seem to have no appetite for a form of defence that would prejudice their chances of retreat, and prefer to adopt the ambush as the pivot of their tactics. They hope, by surprising the assailant, to throw him into confusion and give an opportunity for their cavalry to act. The attack by horsemen is viewed with extraordinary fear, due to the fact that the arms with which the infantry fight, bows and arrows or Dane guns, do not permit of more than one discharge before the enemy can close, and to the superiority always enjoyed by mounted men against foot soldiers deficient in cohesion.

The protracted defence of thatched houses is impossible, owing to their inflammability.

Habitations.

As a general rule the huts in which the people live are formed of a circular swish wall, about 5 feet high and 13 feet in diameter, with a conical roof made of grass thatch resting on bamboos or logs laid at a steep pitch. There is but one opening to the hut, 3 feet high and 18 inches wide, and this has generally a sill 2 or 3 inches high to keep out the water in the heavy rains. As a further protection against the weather, many of the huts have a slight inner wall some 18 inches from and immediately opposite the doorway, leaving a narrow passage on each side for entrance or exit. The absence of ventilation renders occupation of a native hut by Europeans almost insupportable, but the owners do not appear to suffer any inconvenience from it even when the vitiated air is thickened with the smoke of a wood fire. The floors of the huts are treated with cow-dung and beaten till they are hard, a final colouring being given by sprinkling over them a decoction of tamarinds.

There is no attempt at furniture, and the modest luxury of a raised sleeping place has not yet been introduced. A grass mat laid on the bare floor forms the couch, except in the case of important kings, who have at their disposal leather cushions, imported from Moshi or Kano, and stuffed with raw cotton.

The limitation of a man's dwelling-house to one hut is a sign of extreme poverty, implying as it does that the owner has but one wife. It is the custom for every wife to have a separate hut for herself and her offspring; other buildings are erected as stables, cow-houses, and sheep-pens, and in a typical establishment these are arranged in a rough circle round a courtyard of hardened earth, and connected by means of low walls. The chiefs' compounds differ from those of the rank and file of the population only in the huts being more numerous and considerably larger. By far the largest hut seen in the country was the ante-chamber of the chief of Tolon in Dagomba. This could accommodate 50 men and 20 horses at a time, and was altogether a most ambitious piece of architecture.

In the Frafra country an entirely different form of hut prevails. The sloping grass roofs give place to flat ones of hardened earth, supported by heavy beams. The huts are more closely huddled together in the compounds, and the half of the courtyard nearer to the entrance is used as a cattle-pon. In Daboya the chiefs have had flat-roofed houses built for themselves, but they are used only for sitting in during the hot weather.

Another point of difference is that in Frafra the granaries Granaries. are built into the walls of the compound, whereas elsewhere they stand outside by themselves. They are generally made of swish in a roughly cylindrical form, are thatched with straw, and are raised above the ground on logs. Sometimes, however, the grain is kept in huge pots, of a make similar to that of the cooking utensils.

There is sometimes an attempt made to relieve the monotony Ornamentation. of the exterior of the huts by smearing them with a coating of greyish clay, or with daubs of red, black, and white earth; and in some instances rude geometrical figures were seen.

The mosques in the larger towns are squalid erections, with coarse and stunted traces of Oriental architecture in their design. The use of ostrich eggs as exterior ornamentation appears to be confined to these buildings and to the huts of the priests.

The household utensils consist only of calabashes and earthen pots of various sizes. By far the larger number of the former are made from the fruit of a gourd, but at Walewale the manufacture of wooden ones was witnessed. The operator was provided with an iron gouge, and laboriously hollowed out a solid block of wood. No exceptional use seems to be made of these vessels, and they are very rare. Calabashes are used for bringing water from the stream, as drinking vessels, water-bottles, spoons, and for carrying corn, &c., to market. Very often two or more are used at the same time for this last Household utensils.

purpose, and they are then kept together by a net passing over the whole.

Calabashes are of two kinds. The common sort grows on a creeper which is planted among other crops. It is found everywhere, but notably at Yariba, where large plantations are prepared on the banks of the River Kulpawn. The other kind, used especially for water-bottles and spoons, grows on trees.

The earthen pots are made of different sizes, but are all spherical in shape to the tip, where the sphericity is broken by turning back the clay. They are sometimes ornamented with a pattern, produced by drawing diagonally across the newly-turned clay an old cob of maize from which the corn has been removed. The usual size is that which constitutes a fair load when filled with water. It holds about 3 gallons. Smaller ones are used for cooking, and large pots of a capacity of 10 to 20 gallons are largely used for holding the daily store. There appears to be some difficulty experienced in the manufacture of these latter, which are imported into Mamprusi and Daboya from Frafra. The fireplace consists of three stones or lumps of swish placed so as to raise the cooking pot a few inches from the ground.

It is one of the duties of the wife to do the cooking and to present the food on bended knee to her lord and master. In Dagomba a ceremony precedent to this is the presentation of a bowl of water in which the husband rinses his fingers, which are the only means employed of conveying the food to his mouth.

Social
relations.

The family tie among the natives is a strong one, and this is shown not only in the relations of husband and wife and brother and sister, but in the attention lavished on the parents long after they have become incapable of any work. This solicitude for the helpless is as noticeable as it is pleasing, and is displayed in another form towards lunatics, whose infirmity is regarded as a visitation from the gods for evil done by others, and who are treated with uniform tenderness.

The father of the family is emphatically its head, and custom demands unquestioning obedience to him from the wives and children. Public opinion is, it is true, directed against a man whose notorious bullying drives a wife to rebellion or flight; but, unless she can produce positive proof as to habitual ill-treatment, she is assumed to be in the wrong, and a fugitive to her own family is almost always led back after suffering at the hands of her relations a foretaste of the beating that her husband is entitled to give her. This attitude on the part of the woman's family may be explained by the fact that they have to disgorge the wedding present if a final separation takes place. The behaviour of husband and wives towards each other is, however, generally affectionate, and it is seldom that a case of ill-treatment is advertised by the tears of the latter.

Courtship
and
marriage.

Girls attain puberty at the age of between 10 and 12 years, and marry young. A man who desires to wed a particular

maiden first approaches the mother and endeavours to propitiate her with a small present. If he obtains her consent he then makes formal application to both parents and discloses his ability to pay the marriage present of cloth and cowries. In most countries the discovery that the bride has had relations with another man before her marriage is made the subject of an action against the deceiver, but in Daboya such a lapse from virtue is not regarded with disfavour. Girls before marriage are there allowed the fullest liberty in this respect, it being conceded that their virtue is a possession of their own, to be disposed of, if they choose, without criticism. After marriage the husband is acknowledged to have a voice in the matter, and infidelity is a punishable offence. There seems to be no particular marriage ceremony among the Pagans. The present to the parents being duly paid, a feast is held, and the bride is washed and led away to her new home. In Wa relations and friends remain with the newly-married couple for a week, feasting at their expense, and keeping up a continuous din with tom-toms. In Gurunsi and Dagarti the bride is presented with rings and bracelets by her friends.

The choice of a husband rests with the girl's parents, but in Dagomba a princess of the blood royal can marry whom she pleases.

The laws of consanguinity prevent a man from marrying his mother, his son's wife, or his sister, but there is no bar to his espousing his niece, and, except in Dagomba, widows become the wives of the eldest brother of the deceased man as a matter of law. Women slaves are taken as concubines, but have no claim over their children, who are the exclusive property of the mother's owner.

Polygamy is universal among both Mahommodans and Pagans. The practice does not appear to be in any way connected with religion, but is dependent on the numerical excess of women over men. The native is sufficiently old-fashioned to accept as a matter of course the theory that the principal mission of woman is to provide the next generation, and sufficiently logical to insure that every member of the sex shall be given the opportunity of contributing to this result.

In very poor communities, subject to raids by powerful neighbours, one wife is the rule; but, where the resources of a district or town enable it to defend its own or to purchase or carry off from others a surplus female population, position or wealth takes as an attribute a plurality of wives in an ascending scale, the harems of the various kings sometimes attaining large proportions. The common practice of regarding a woman as inviolable until her child is weaned is also an encouragement to polygamy, and it may be mentioned that in some tribes mothers take the fullest advantage of this sanctuary from marital attentions, and may be seen with children two years of age at the breast.

Infidelity among married people is by no means rare, and is an actionable offence. It is endemic in the households of some

chiefs, generally past their prime, whose wives are not fully contented with the fraction of their affection, the denominator of which is the establishment of the harem, and frequent elopements take place in spite of draconic laws for the punishment of royal indiscretions. The death penalty is not always enforced, a heavy fine being sometimes levied instead on the seducer, this fine including, in Dagomba, the appropriation of such of his female relations as find favour in the eyes of the chief.

Divorce. Divorce is recognised, and seems to depend almost entirely on the whim of the husband, who may return a woman to her family for alleged misconduct, retaining her children and demanding back the present made to her parents at the marriage.

Division of duties. The marriage tie is, therefore, a light one, but it would be much more fragile if it were not that the woman occupies an important position in the routine of household work. Unlike the native tribes in South Africa, the man performs the whole of the heavy field work. It is not clear that this is due to advanced notions on his part as to the status of the softer sex, or to a feeling of chivalrous gallantry. A more reasonable explanation is that he is neither a hunter nor a warrior by profession, and so has not achieved the lordly contempt of the Zulu for manual labour. In this connection it may be remarked that in the more complex social conditions surrounding the great African Chief Samory, the warrior class disdained to till the soil, this duty being cast upon the numerous body of foreign slaves.

In addition to the duties of maternity, the women assist in sowing the crops, winnow and grind or pound the corn, prepare it for consumption, fetch the water from the pools, and collect firewood. There seems to be an etiquette among them that the last-named duty shall be performed by those stricken in years; both because the load of wood can be more easily adjusted than that of water to declining strength, and also because the fuel-collectors are compelled to wander further afield, and there might be danger of a comely damsel meeting with an amorous adventurer far from home, or of her making an assignation with a favoured swain. The water-bearers move along a path constantly frequented, where violence is out of the question, and where flirtation could hardly escape detection and report.

Children are treated affectionately by both parents, and are well fed and looked after. In their early careers they are under the mother's special care, and, in addition to their milk diet, are forcibly stuffed with porridge, with very hemi-spherical results. As soon as they are old enough to walk unaided, they accompany their mothers to the wells, and at a very early age are taught to bear a small calabash of water on their heads.

Domestic slavery.

The forcible abduction of men, women, and children from their homes, and their sale in foreign countries, are, of course, no longer possible in a province under British rule. It is a

practice that cannot be condemned too strongly, but it must not be confused with the domestic slavery that exists everywhere, and which is one of the most solid foundations of social life. The difference is sometimes lost sight of at a distance from the country, but it cannot be more conclusively established than by saying that slave-raiding is heartily execrated by all, and that domestic slavery is not regarded as a hardship even by those whose liberty is partially curtailed by the system.

The every-day life of slaves differs in no respect from that of the free men. Ground is allotted to them on which they are free to work for their own benefit, the rule generally being that they may take two days out of every five for work on their own account. With the accumulated results of this labour they are at liberty to purchase their freedom. The price demanded is not excessive, and ranges from £3 to £5, according to locality, but so lightly does the yoke of slavery bear that only a comparatively small proportion seek their emancipation by this means. Slaves may marry, and are encouraged to do so, the children becoming the property of the master. The apparent hardship of liability to sale is in reality not oppressive. The march to the new owner's place of abode is free from any suggestion of cruelty or force; the slave partakes of his master's food and shares his lodging, and he is certain of kind treatment on arriving at his destination. During 18 months of administration no complaint was made by slaves of ill-treatment by their masters, except in one or two cases of wives, whom inquiry showed to be victims of illicit passion, to gratify which they appealed for separation from their husbands.

Domestic slavery must be regarded as a harmless form of labour contract, so deeply rooted in the social economy of the native that it is most undesirable to modify it except by the gradual process of education, and by the growth of a system that will put into competition with it work of a remunerative nature under Europeans, and thus furnish an easy means of self-emancipation.

Dress. The fashions in dress vary widely in different parts of the country, and among the different religious classes of a community. As a general rule it may be said that the Mahomedans are fully clothed, and that the scanty covering of the Pagans, often confined to the lightest possible concealment grudgingly conceded to a superficial sense of modesty, serves rather to accentuate than to disguise their nudity. Mahomedans in general wear a pair of loose trousers fastened at the ankle, and a long flowing robe with open sleeves. An outer robe, generally white in the case of laymen, and always green or white trimmed with green in the case of priests, is also commonly worn. A cap of cloth, like a brewer's cap, and a pair of sandals, complete the costume. Charms are worn suspended round the neck and waist, and from the wrist, and are also sewn on the clothing. The Fulahs and some of the Hausas, small colonies of both of whom are found attached to

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the towns and larger villages, wear turbans, and the former (who have not yet penetrated south of the Scarp) draw a fold of the turban over their mouths. Straw hats, made in Moshi, are worn over the caps in hot weather. They are bound with leather, and have centre-pieces and chin straps of the same material. Being strongly made and having broad brims, they afford excellent protection against the sun. The Moshis wear, when riding, a long boot of soft leather reaching above the knee, ornamented with a fancy pattern of coloured leather down the front. Spurs of soft iron, with short spikes instead of rowels, are also worn when riding. The next gradation in male dress is a short sleeveless coat, reaching just below the fork. It is used as a war coat, and is dotted with square leather charms containing, as a rule, scraps of the Koran. The skins most in demand for those charms are those of the lion and leopard, as befitting the use to which the coats are put, but buckskin is more easily attainable, and is in common use. There is no doubt that these charms afford considerable material protection to the wearer, but it is certain that the main reason for wearing them is a religious one, as putting the owner of the garment under the special guardianship of his divinity. A further proof of the force of superstition in this connection is the value attached by Pagans to a coat that, though unprovided with charms, has been washed with "medicine." By turning this coat inside out its warlike character is held in abeyance, and the method of wearing it is therefore an indication of the mental attitude of the village visited, but the natives are liable to sudden changes of opinion, and the simple nature of the garment enables them to display the overt sign of altered feeling with convenient rapidity. Under this coat is worn a triangular piece of cloth, one side of which is fastened to the waist in front, while the third corner is passed between the legs and hitched on to the waistband behind. This garment is the only one affected by the commonalty in the countries south of the Scarp, and they are generally innocent of head-gear or sandals. It is the *topi virilis*, the evidence that a youth has passed the stage of naked boyhood.

Female
dress.

The female costume corresponding to those described above consists in the first place of one or more thick girdles of beads, and then of a cloth wound round the body so as to partly cover the breasts and to reach the knee. In a fold of this the mother wraps her infant, who sits behind astride her waist, and seems to adapt itself readily to the situation, though the spectacle of the brown pate of a slumbering infant rolling from side to side with the rapid gait of its mother is not eminently suggestive of excessive comfort. Among the Fulahs a sort of mantilla is worn, but elsewhere the head is uncovered, except where the importation of gaudy handkerchiefs has caused a departure from the native simplicity.

Unmarried girls wear a short apron, which they don at the age of puberty, before which time the waistband of beads is the only dress-making expense to which their parents are put.

It is in the Frafra district that the clothing worn is so extremely meagre that the inhabitants have earned the contemptuous nickname of "the naked people" from those whose wardrobe, consisting of a pair of skimpy bathing drawers, entitles them to put on airs. Among the Frafra the men confine their clothing to the irreducible minimum of a tight-fitting cloth capsule, which among high dignitaries is continued in a little strip of cloth reaching to the ground. The women practise an even more rigid economy than the men, and their toilette consists of a bunch of leaves in front and one behind, fastened to a belt of string. Curiously enough, as in Europe, fashion demands that the posterior covering shall be fuller than the front one. It is difficult to conceive any special vanity attaching itself to such a costume, and its absence is sadly evidenced by the carelessness often displayed in renewing the leafy covering, although the material for it is always close at hand.

It is remarkable that these people, who lag so far behind other tribes in most sartorial effects, should surpass them all in the variety and composition of their head-gear, which is, however, reserved for warlike demonstrations. A cap is formed by covering a calabash, or hemisphere of straw, with the skin of some animal, and this forms the basis for the ornamentation, which consists either of cowries or the horns of an ox or buck, or else of a lofty plume of white horsehair. These last have an imposing and picturesque effect in contrast with the black skins they overtop.

The natives do not confine themselves to the cloth of their own manufacture, and those that can afford it purchase imported goods with great eagerness. The gifts of velvet and satin made to kings and important chiefs are highly appreciated, and are at once made into garments of state.

The weapons used by the natives are bows and arrows, spears, swords, knives, and "skull-crackers" of wood and iron. In some districts, notably in Dagomba, Dano guns have superseded bows and arrows to a large extent. The bows are made of bamboo or a stiff wood, similar to that employed for spear-shafts; they are about 8 feet long and are strung with hide. The arrows are made from reeds, and tipped with barbed iron of local manufacture. They are always poisoned for active service, but for hunting they are sometimes free from any deadly preparation. With a light wind behind them the natives can send their arrows with penetrating effect a distance of 200 yards, and the poison used is so deadly in its nature that fatal results rapidly follow its contact with the blood, unless immediate remedies are applied.

The method of preparing the poison varies among the Frafra, different tribes in details, but the main principle is the same. The juice of the fruit of a tree (Yao in Wa), or of the leaves of a herb (Yabi in Mamprusi), is mixed with water and boiled with snake's heads, some part of the interior of a crocodile, and scorpion's tails, until it thickens. In Frafra an ingredient is a

water insect called Ali, the effect of which is to produce intense thirst and so accelerate death. In Wa importance is attached to the water being obtained by collecting the dew from grass or the drippings from a leaky house. Into this mixture the arrow heads are dipped and are then allowed to dry, the process being repeated until they retain a thick deposit. Great mystery is attached to the process of manufacture, the utmost secrecy being observed, and it is noteworthy that the intrusion of a woman or a dog is held to nullify the process. The operators must not eat till nightfall, and may not sit in the shade. In some districts food is forbidden altogether while the manufacture is proceeding, and as this lasts from three to seven days instances have been known where individuals have perished from their prolonged fast in preparing the means of death for others.

Another method of poisoning arrows, common in Dagarti and known everywhere, is to leave them inserted in a putrefying body.

The arrows are carried slung over the shoulder in wooden quivers, which are gaily ornamented with snake-skin, buckskin, and different coloured grasses. They are also furnished with tassels made of strips of leather.

An antidote to the poison is used, and is taken internally as well as applied to the wound after it has been sucked. This last duty is not coveted, as it is said that the results are sometimes that the teeth of the operator fall out, and sometimes that he dies outright. The antidote is carried only by chiefs, and is made (Wa) by reducing to ashes in a pot over a fire the leaves and roots of the Ga and Jerema plants, together with the root of any plant growing across or along a path. The ashes are ground and mixed with shea-butter. In Dagomba the antidote is in the form of a powder. It is always carried in a small ram's horn in the inner folds of the coat.

In the instances that occurred during the British occupation of arrow wounds received in action, it was observed that those men that were seriously wounded died within two hours without any signs of great pain, and that slight surface wounds yielded to the application of permanganate of potash. It is unfortunate that no medical officers were present to furnish an expert opinion in the matter. Those, however, who were made acquainted with the details declared that the poison could not have really effected a lodgment in the cases that recovered. The natives, in describing the symptoms of a man seriously wounded with a poisoned arrow, state that he swells all over, and that blood flows from his nose and ears; delirium ensues and is accompanied by shivering and sickness, and a change of colour precedes death, which takes place within a few hours of the victim being struck.

The spears are generally about six feet long and rather narrow in the blade. In Moshi they are broader, and in some instances are inlaid with brass. Sometimes the heads are

barbed, and in this case they are short, pointed, and of slightly greater thickness than the shafts.

Swords are perfectly straight, two-edged, and tapering to a point. The hilts are small and plain, and are covered with leather. They have a boss and a straight piece at the insertion of the blade, but no guard.

The knives and daggers are straight, and in form are miniature reproductions of the swords.

The clubs or "skull-crackers" are either of wood hardened with fire, or else have short wooden handles with iron heads like a one-sided short pick, running to a small knob at the end.

Whenever obtainable, Dane guns have superseded other native weapons either for war or hunting. The owner affixes to the fore end, bound to the barrel with raw hide, and projecting downwards, a short piece of wood, which he grasps with his left hand on coming to the "present." He adorns the stock with cowries and charms, and reckons his weapon as his most valuable possession. The trade powder supplied is, fortunately for the longevity of the gun, of a most inferior description, but the bullets of hammered iron with which the native, in default of lead, completes his charge, are capable of inflicting very serious wounds.

Funerals take place within 24 hours of death, and are made the occasion of little, if any, ceremony at the time. Chiefs are often buried in huts and in white shrouds, but in ordinary cases the body is placed in every-day attire in a shallow grave, the site chosen being preferably on an incline. A few cowries and a little corn are thrown into the grave in Daboya, but this ceremony is omitted at the interment of children. A feast is considered to be a proper adjunct of a funeral, but it may, and generally does, take place some considerable time afterwards. Large stones are placed over the grave in order to prevent wild beast digging up the body, and not with any monumental intention.

In Dagomba the tribal marks are a series of fine cuts from the corner of each eye to the corresponding corner of the mouth. The number of cuts varies. Members of the royal family have, in addition, one line at right angles to these.

The Daboya marks are three lines on each cheek from the temple to the chin.

The Moshi marks are three vertical lines down each cheek from opposite the eye to opposite the mouth. These are universal, but hok is supposed to come from cross marks on the cheeks and from others on the chin, and these are cut as fancy dictates. The king's family and household have in addition a cross cut on the right cheek.

The Bole marks are three slanting cuts on each cheek; those of Gurunsi are formed by short-sided acute angles from the corners of the mouth; and in Dagarti two parallel lines are drawn outwards from the corners of the eyes across the cheeks.

In Mamprusi three thin lines are cut underneath the eyes from the nose outwards, and three other thin lines from under the ears along the jaw. If at the birth of a child the mother dies, a fourth line is added to these last three.

These marks are made soon after the birth of the child.

Of other marks intended as ornamental, the most striking is one affected by women. The skin is cut and the seed-down of the silk-cotton tree is pushed underneath so as to raise the skin. When the cut has healed, there is a permanent ridge of undefined shape, which to the European eye is extremely unsightly.

Partial head-shaving is universal, and the patterns are very numerous. No meaning is attached to any of them. The most common leaves a thin strip of hair down the centre of a shaven head. The women do their hair either in little plaits or in a tight ridge along the top of the head. The coarseness of the hair and its shortness render the process of adornment a tedious one, and call for the use of a heavy wooden comb.

Ornaments.

Beads are in universal use as ornaments among the women. They constitute full dress among the very young, but no woman is without one or two strings of them round her waist and next to the skin, while their use as necklaces is very popular. In Moshi huge bracelets and anklets of brass are worn by all who can afford them, and the horses are freely decorated with the same metal. In all districts the men are given to wearing just above the right elbow an armlet either of wood or of a marble-like stone imported from Kano.

Amusements.

The chief amusement of the people at large is dancing, accompanied with singing and the noise of drums and other instruments. In Wa there are professional dancers, who wear a double row of iron bells on their ankles and pieces of metal on the thumb and forefinger, with which they mark the cadence of the dance with great exactness. They dress alike in loin-cloths and tails, and execute with great spirit a circular movement, the women moving round with them, fanning them and inciting them to fresh exertions.

In Mamprusi a similar dance is popular, but the men provide themselves with short staves instead of bells, and beat time by striking those of the men in front of and behind them alternately. There are also dances confined to women. These form round in a large circle, into which two enter at a time. Placing themselves a few yards distance from each other, they make two or three rapid revolutions in time with the music, and then butt each other backwards, bending low in order to give full effect to the encounter.

In another so-called dance a woman steps into the centre, submits to a few passes over her face, and is then apparently supposed to be hypnotised. She stands unmoved while her companions deck her with bits of their finery and indulge in such light horse-play as pretending to blow her nose, and offer other attentions not remarkable for refinement. When she has

had enough of it she throws off the spell without assistance, and another immediately takes her place.

It is said that at the harvest festivals dances of a most suggestive character are indulged in, but no sign of these was apparent.

The musical instruments used in these entertainments are the tom-tom, or drum; a rough guitar, made of a calapash with horse-hair strings; a crude form of violin; and a species of "glockenspiel" with wooden keys. The notes on these latter are few in number and the combinations very short and simple, and iteration and reiteration of the same airs never seem to weary the West African. His chief musical treat, however, is the tom-tom. In season and out of season, all day and all night, he is prepared to abandon himself to the delight of a noisy demonstration on this instrument of torture, and it is more often exhaustion on the part of the performers than boredom by the audience that puts a period to the deafening and monotonous noise.

A form of draughts is played everywhere, but no explanation of the rules is forthcoming. The Dagombas appear to be peculiarly addicted to games of chance. A favourite one is "pitch and toss" with local colour, cowries being used, and each player taking as his share of his throws such of the shells as remained with the opening upwards. At one time the game was so fashionable that fortunes were risked on a throw of the cowries, and the scandal became so great that the game was forbidden under pain of flogging. In the same country there is a game similar to that of throwing at the cocoa-nut, cowries being placed on a stick, and falling to the successful thrower. Sweepstakes take place at archery meetings, the target being a stick. Horse-racing takes place every Friday at most large towns, a course of about half a mile being kept clear for the purpose.

Games.

All the natives both smoke and take snuff, the mouth being the receptacle in the latter habit. The pipes generally have clay bowls and long stems, and are often provided with iron frames, to enable the smoker to rest them on the ground and to save himself the trouble of supporting them.

Smoking.

CHAPTER V.—FOOD PRODUCTS—AGRICULTURE.

Food.

ABOUT Kintampo the forest food products are still found, and cassava, plantains, and papaws are obtainable. North of that place, however, cereals form the staple food of the population. Guinea-corn, millet, and maize are universal, and rice is grown in small quantities in certain favoured localities, notably in the neighbourhood of Zuaga. A favourite article of diet, especially among the Dagombas, is yam, but it is not grown north of the Scarp. The cassava, grown in the Northern Territories is different from and inferior to that found further south. It contains a poisonous principle that can only be eliminated by soaking the food in water for several days. It is then dried and pounded, made into balls, and put away to serve as a last resource if other crops fail. Among other articles of diet are ground-nut, okro, beans of several kinds, pumpkin and garden-eggs (both uncommon), pawpaw (very rare and of poor quality), limes and tomatoes (also rare, and the latter hard and tasteless), peppers, and a kind of spinach. Onions are only occasionally seen. One or two edible fruits grow in the bush, but they are dry and extremely insipid, and at best are only a preventive of actual starvation. A lily-root is much sought after during the rains. It is very juicy, and its taste, when eaten raw, is sweet and not unpleasant. It forms a starchy flour of exceeding whiteness.

Manner of preparing food.

The staple dish of the natives is a stiff porridge made of ground millet or guinea-corn. As a general rule, the grain is pounded in a mortar formed by excavating a hollow in a log of hard wood, the pestle consisting of a thick rammer 4 feet long, with a head at each end. Two stones are, however, in common use for the same purpose in many places, and in Moshi it was observed that each village of importance had a solid circular platform 2 or 3 feet high, made of ash, and topped with stones, at which a dozen people could simultaneously grind their corn. The flour is mixed with water and boiled, and is eaten either alone or with meat or vegetable soup, when these are available. It is seasoned with salt, but those natives that have had the opportunity of trying sugar infinitely prefer the latter. Soup is made from okro, beans, garden-eggs, and pumpkin-leaves, and is seasoned with pepper.

Small cakes are also made of the flour of millet, guinea-corn, and maize, but this last is usually eaten in the cob, which is either roasted or boiled.

Yams are roasted and boiled, but in some places are pounded and made into balls.

Porridge made from coarsely-ground guinea-corn was preferred by Europeans to that made from oatmeal, and a finer ground flour was found to produce a dark-coloured and not unpalatable bread. In the absence of baking powder, native beer supplies the principle of fermentation.

Pumpkins and beans are often boiled and eaten as vegetables.

Ground-nuts are roasted, boiled, or eaten raw.

Papaw is eaten as a fruit. It is much inferior in taste and juiciness to the coast variety, and is remarkable for being often entirely free from seeds. It is not found in the northern districts.

In addition to this vegetable diet, the natives are very partial to meat. Beef, mutton, and poultry form the chief dishes, but they will eat any kind of meat that is provided for them. Hippopotamus flesh is much sought after, and that of the crocodile is considered a great delicacy. Although fond of fish, they are at no pains to satisfy their taste, and no attempt is made to cure and keep the catch. Oysters are common in the Volta River, and form a regular article of food to the riparian population. They eat vultures and bats, but these are regarded more as "medicine" than as gastronomic dainties. Tame guinea-fowl are kept everywhere, but they are much inferior to the wild variety in flavour. The beef and mutton are insipid, and the necessity imposed by the climate of eating them the day the animals are slaughtered makes for toughness. This necessity does not hamper the native, who treasures his joint until his presence in camp is an offensive nuisance, for he dare not part with the putrescent morsel for fear of its being at once captured by some hungry comrade. Fowls are roasted whole, and other flesh is cut into small pieces which are skewered together and roasted near the fire.

Honey is eaten by itself, and is sometimes used in the manufacture of cakes. Earthenware pots are suspended in trees for the bees to occupy, and they readily avail themselves of the courtesy.

The use of kola-nuts must be included in a description of the native foods. They are imported from Ashanti, and are everywhere in great request. The chewing of them is indulged in at all hours by those that can afford the luxury, and with them it is a habit similar to that of smoking. The nuts have, however, the reputation of possessing remarkable sustaining powers. To the unfamiliar palate the taste is unpleasantly acrid.

The native does not eat eggs, and though the taste of the European in this direction is recognised, it is not understood. They generally form part of the customary "dish," or present, but the native is solicitous only about their number, and is indifferent to their family history. That they contain chickens in various stages of development or are ancient reservoirs of unsavoury gases is to him no discount on their value, and it is only in those villages where the frequent passage of Europeans

has exhausted the accumulated failures of years that any reliance can be placed upon these offerings.

In some villages tame pigeons are kept, but they are never offered as presents, and it is doubtful whether they are generally eaten.

Cattle and sheep are not systematically bred south of the Scarp, and they do not thrive south of 10° north latitude. The stock is replenished by the annual importations from Moshi.

Milk is not drunk except by the Fulah colonies, and butter is made by them alone. Horros are in great demand, but they do not flourish south of the Scarp, and are imported every year.

Drinks.

Water, in very large quantities, is the usual drink of the natives, but they are very partial to mixing with it flour made from millet, and the mixture is both refreshing and sustaining. On festive occasions, and as a sign of great hospitality, beer is produced. This is of two kinds, the milder being made from guinea-corn, the stronger from honey. For the former, the corn is soaked in water until it sprouts, is then ground, and boiled for many hours in large earthenware pots. The second kind is manufactured by boiling the honey and mixing it with millet. This is then ground and pressed. The liquor thus obtained is boiled again, and is then ready for use. The guinea-corn beer is the more common, and forms a pleasant drink with but slight powers of intoxication. Toddy is manufactured in the few places where palm trees are found.

Trade spirits have found their way on one or two occasions into the Northern Territories, but the import is for the present forbidden. They are rank poison, are quite unnecessary, are invariably productive of crime, and their sale to the natives should be strictly forbidden at whatever cost to the revenue.

Game.

Game is scarce and shy in the Northern Territories, and the natives are not expert hunters or trappers, but the possession of a gun enables the European to vary his diet with buck, pauw (bustard), khoran, goose, duck, guinea-fowl, bush-fowl, partridge, sand-grouse, pigeon, and hare, but of these only guinea-fowl and bush-fowl are common. Buffalo meat is sometimes to be had, but the flesh is unpleasantly strong, although, perhaps on this account, it is in high favour with the natives.

Agriculture.

The methods of preparing the ground for the reception of seed, and the instruments used in the process, are practically identical throughout the country. A place having been selected as suitable for a farm, the undergrowth is burned, and the trees are ringed. The grass roots and the stubbs of the smaller trees are then removed with heavy short-handled hoes, the metal of which is set at an angle of about 75° with the haft, and with small narrow-bladed axes. The debris is collected into heaps and burned, and the ground is then ready for sowing grain, but for yams and cotton plants the soil is scraped into low mounds for the reception of the seeds. It is probable that in many places this apparently slovenly preparation is more suited to the circumstances of the soil than a more elaborate process. The stratum of alluvium is often

so thin that a plough would throw up the underlying laterite, which promises little fertility until weathered by exposure.

When actually at work the native does not spare himself, and those employed in road-making were very willing and industrious.

The corn is sown, as a rule, in little groups of two or three grains about a foot apart, and grows very rapidly and strongly, guinea-corn attaining a height of 20 feet in sheltered situations.

The crops make their appearance above ground on the advent of the first rains, and by the time these are over all of them are in full ear. Maize will produce two crops in the season, as was ascertained by experiment, but this economy is seldom practised by the natives, though they sometimes plant tobacco on the ground from which a maize crop has been cleared.

A good deal of attention is paid to keeping the ground under cultivation clean during the growth of the crops, and to banking up the roots. Manure is not systematically used south of the Scarp, but to the north it is commonly employed.

The general rule as to working the ground is to grow two crops and then to let the farm lie fallow for a year, but this is by no means universally followed. The ground in the vicinity of the huts, which is fertilised by the insanitary habits of the occupants, and by their scattering over it accumulations of ashes and rubbish, is laid under contribution every year. Yams and sweet potatoes, on the other hand, require unexhausted soil, and are planted either in virgin ground or that which has borne no root crop for three years. In the latter case a regular rotation is observed, *videlicet*:—First year, yams; second year, guinea-corn or millet; third year, maize; fourth year, yams; and so forth.

Rotation of crops.

Irrigation is not resorted to.

The harvest is gathered, in the case of standing crops, by pulling the stalks down and cutting off the heads. Reaping is never adopted.

The following table shows the sowing and harvest times of the principal agricultural products of the country. The time taken in maturing differs according to the rainfall, which varies greatly in different localities:—

Sowing and harvest seasons.

Crop.	Sowing Time.	Time taken to Ripen.
Beans	March and April	6 weeks (3 months for seed).
Cassava	"	6 months.
Garden-eggs	"	2 to 3 months.
Ground-nut	"	6 months.
Guinea-corn	May and June	6 to 9 months.
Maize	March to June	2 to 3 "
Millet	April to June	2 to 3 "
Okro	March and April	1 to 2 "
Pepper	"	2 to 3 "
Pumpkin	"	3 months.
Tobacco	September	2 "
Yam	March to April	6 "

The soil, whether alluvium or sand, is generally exceedingly fertile, and it is believed that it would be possible to grow a variety of crops, fruits, and vegetables if a constant and abundant supply of water were available. This would be possible in some places by damming streams, but in most the solution of the difficulty can only be found in the discovery of water stored beneath the surface, and in the use of wells and pumps. A supply of fruit and vegetables, in which the country is curiously deficient, is of high importance to the health of the European community, and their growth might with advantage be treated experimentally by an expert under the auspices of the Government. In this connection it may be of interest to record the results of some amateur efforts made at Gambaga.

Horti-
cultural
experiments.

In Appendix C will be found in tabular form the seeds dealt with and the general results.

Application for samples of good oats and wheat was made privately in December, 1897, to the Colonial Office, and was at once approved. A parcel containing about 6 lbs. of each of the following was despatched from Liverpool on the 2nd April, 1898:—

- | | |
|-------------------------------|-------------------------|
| 1. Choice white Bombay wheat. | 4. Canadian oats. |
| 2. Choice Kurrachee wheat. | 5. White English oats. |
| 3. New Zealand oats. | 6. Yellow English oats. |
| | 7. Black English oats. |

The unsatisfactory nature of the transport system in the Gold Coast Colony is unfavourable to rapid transit, and the consignment did not reach that station until the 22nd July, or about two months after the time when the grain should have been sown. Other circumstances conspired to reduce the value of the experiment. The wheat was attacked *en route* by weevils, and very few of the grains were whole. The oats were in good condition, but the English white oats must have been tampered with, for not a single grain germinated.

The ground had already been prepared for the reception of the grain, and it was all sown within six days of arrival, a slight delay being caused by the fact that it was necessary for every detail to be carried out under the direct supervision of a white man. The growth was visible generally five or six days after sowing, and was very strong and rapid for about two months. The absence of rain and the power of the sun then combined to stunt the growth and over-hasten maturity. The wheat, which was more forward than the oats, fruited on the few fertile plants (October 2nd), but the oats for the most part withered just as the development of the ear began, and there was no appreciable crop, though the plants proved very useful as horse fodder. It seems probable that the soil is suitable to these cereals, and particularly to wheat, but with the present prohibitive transport rates there can be no inducement to pursue the experiment on a large scale.

Of the vegetables grown from English seeds, by far the

most useful and productive were tomatoes. A succession of sowings provided a continuous supply, sufficient for all Europeans at Gambaga, for over six months, and the fruit was declared by all to be as fine and well flavoured as prize specimens in England. There is no reason why they should not be grown all the year round, but high excellence can only be expected during and immediately after the rains. Cucumbers and vegetable marrows grow well and are very prolific during the rains, but the latter suffer severely from insects, which attack the fruit at a very early stage in its existence. Mustard and cress, lettuce, and radishes all did well, but turnips were only partially successful. Onions and beet-root were a failure, but the former may do better if sown during the rains. The seeds all germinated at the first sowing, but rapidly became affected by the climate, and a month or so after having been taken from their sealed box became unproductive. Cabbage and spinach grow very well, but they, and especially the former, were rendered useless by the attention paid to them by numberless insects and caterpillars. It is necessary for the growth of English vegetables that they should be roofed over, and that they should be liberally watered twice a day. Manure is also important.

Of the vegetable seeds supplied to me by the Curator at Aburi, the native spinach (*Basella alba*) was very successful, but the others came to nothing. No result followed the sowing of coffee, cocoa, cotton, guava, orange, and lime, but the lemon pips were fertile, and the seedlings are strong and healthy. On the other hand, the rubber seeds (*Hevea muricata*) produced a fair proportion of plants, the period of germination being only 11 days, and these grew vigorously and rapidly.

In estimating the results of this experiment, it must be borne in mind that it was the first essay of an amateur in a new country, and that other and more important work prevented that close attention being given to the garden which is essential in the entire absence of any knowledge on the part of the men in charge.

It would be interesting to try whether apricots, peaches, nectarines, figs, dates, and grapes could be produced. There seems to be no reason to the contrary, and the result, if successful, would contribute very largely to the health and comfort of European residents.

CHAPTER VI.—TRADE AND RESOURCES.

Trade.

THE great trade existing in the countries north of the Gold Coast Colony is based on the exchange of cattle and sheep on the one hand and kola-nuts on the other. In the grassy plains of Moshi and the countries adjacent to it in the great bend of the Niger, livestock are raised without difficulty, and, assisted by the experience of nomadic Fulahs, the inhabitants produce annually a considerable surplus over their needs of horses, cattle, sheep, and goats. As soon as the cessation of rain permits of easy travelling, a big buyer or the representatives of an agricultural syndicate collect enough beasts to form a caravan, and a start is made for Salaga, Attabubu, or Kintampo, the chief centres of the kola-nut trade. The routes followed run along the watershed of Dagumba, and pass either through Gambaga or Walawala, both Mamprusi towns. In the course of the journey the caravans are compelled to halt at villages of several nationalities, and a toll has to be paid to the chief of every district. At all times heavy, these duties assume a most oppressive character when the caravan is ill-provided with means of self-defence, or when local disturbances render it imperative for a chief to raise the sinews of war. Instances have been known in which confiscation of the whole stock of a caravan took place, and where the sovereign power was too weak or too indifferent to bring the robber chief to book. As a rule, however, such excessive cupidity is checked by the knowledge that such conduct speedily becomes notorious, and diverts trade to other and less dangerous routes. On arriving at his destination the merchant disposes of his stock, and with the proceeds purchases kola-nuts, with which he loads the asses that have accompanied him from the north. His wares are subject to the same inroads by the native chiefs as was his stock, but so great is the demand for the nuts in the Sudan, and at such an enhanced price do they sell at a distance from the country of their production, that the merchant is able to make a fair profit on the whole transaction.

Minor trade.

This is the main trade, but there is a constant interchange of commodities between the different States, the goods consisting of iron, pottery, salt, country cloth, and leather work. European goods are imported across the Sahara, and also by pedlars from the coast.

European articles in demand.

The articles of European manufacture most in demand among the natives are:—

Dane guns, a crude form of smooth-bore gun.
Gunpowder, a weak explosive, making much noise, smoke, and smell.

Lead for bullets, though many men prefer bullets of soft hammered iron of their own manufacture.

Cheap cutlery.

Basins, brass and enamelled.

Blue, grey, and white "bafta," superior qualities being most in vogue.

Light cotton prints.

Gaudy handkerchiefs.

White Croydon linen.

Brass rods.

Beads.

Looking-glasses.

Pomade.

Salt.

Pipes.

In order to ascertain the native requirements consultations were held at important towns with the local traders and with such caravan owners as were in the neighbourhood or passing through, and in order to familiarise them with European produce, without awaiting the tortoise movement of coast enterprises, Government stores were established at Gambaga and Wa. The former town is situated on the great trade route from north to south, and the reception of the experiment is some indication of the possibilities of future trade. Fancy prints, bafta, linen, and handkerchiefs—these latter in lengths of a dozen—commanded a ready sale, and in a short time the experimental stocks of these articles were all disposed of. The demand continued, and native merchants applied for whole loads of cotton goods for transmission to districts too distant for direct dealings with the store. Other articles were in demand, notably guns, gunpowder, brass rods, and salt, but the price of these was considered too high, and only comparatively small sales were effected.

These results were the more gratifying because the principle of barter was not acknowledged and all payments had to be made in British currency, and also because the existence of the store could only, in the short time it was open, have been known in a small area of country. The fame of it will, in course of time, be spread by travelling merchants and by members of caravans throughout the vast countries to the north of Mamprusi. It is probable that in these countries the natives, who are in a higher state of civilisation than those of the Northern Territories, are not behind these latter either in the extent of their desires or in the means of gratifying them, and it does not require a sanguine imagination to picture Gambaga as an *entrepôt* for the supply of European goods to the whole of the bend of the Niger. The rivalry of the trans-Sahara trade, of the French Senegal route, and of German Togoland, is not to be feared if measures are taken to substitute some economical form of mechanical transport from the coast for the present slow, uncertain, and expensive system of human portage.

port.

It is not too much to say that the future trade of the Northern Territories, and with it the future financial independence of the country, is dependent upon the elaboration of a suitable system of transport. Gambaga is, by the present route, 500 miles from any seaport. Making allowance for rest days, for the delay in sorting goods for various stations at the supply base, Kintampo, and for the arrangements necessary to procure carriers at transport stations, the journey must be expected to occupy five weeks in the most favourable circumstances. The load carried by each porter is, according to the contract made by the Gold Coast Government, one of 56 lbs. gross weight, and the net weight of merchandise does not average more than 46 lbs.

For the first 250 miles, from Capo Coast to Kintampo, the route lies through the Gold Coast Colony, and the charge for a load over this section is at least £1 17s. 6d. The rest of the route, from Kintampo to Gambaga, almost identical in length, costs 18s. for the transport of a load. It is therefore necessary to surcharge the original cost of 46 lbs. of merchandise with a sum of £2 10s. 6d. before it can be sold at Gambaga without actual loss. As a matter of fact the store is regarded as a pioneer of ordinary commerce, and a profit is made on every article sold in order not to prejudice the trader, who will, it is hoped, before long relieve the Administration of the necessity of continuing the venture.

The effect of this charge is, of course, very discouraging to trade, and it is a matter of certainty that a very large increase would immediately accrue, without in any way diminishing the profits, if a cheaper system of transport admitted of an appreciable reduction of sale prices.

It is not only in the matter of trade goods that this question of rapid and economical transport is of signal importance to the Administration. Under present regulations a tour of duty in the Gold Coast lasts one year, and the bulk of the officials of the Northern Territories are stationed in the districts most remote from the coast. During ten weeks of the year, or for nearly 20 per cent. of their service of the country, the services of these officials are lost in travelling, while the long and tedious journey through the forest is a strain upon their health; and the cost of the necessary train of carriers and hammock-men is a serious item of expenditure. The same disadvantage as regards expenditure applies, of course, to Government stores, and the delays of the journey are a constant obstacle to development of the country.

The transport charges for the transport service of the Northern Territories for 1898 exceeded £40,000, and this would form a useful basis in determining whether a system more satisfactory as regards speed and efficiency could be introduced with due regard to economy.

Facilities for mechanical transport.

There are two means of mechanical transport that suggest themselves, by water and by land; and it would be possible so to arrange the working of these as to secure an uninterrupted service throughout the year.

Water transport.

The River White Volta runs through British territory from the northern limit of the Territories to the sea. Like the Benue and other African rivers where steam transport is in vogue, the volume of water in the Volta varies very much according to the season of the year. At the close of the dry season the flow in the upper reaches consists of a shallow stream in which canoes can with difficulty find an unimpeded channel, but shortly after the advent of the rains the huge bed of the river is filled bank-high with a deep and rapid torrent that would, it is calculated, provide ample water for the navigation of stern-wheel steamers. No detailed survey has yet been made of the whole river, but it has been visited at many points, and the result of these investigations and of inquiries among the natives point to the conclusion that there are only two sets of rapids that are a bar to navigation. These are at Pong and near Koto. It is under contemplation to build a railway from Accra to Pong, and when this is done the first link in the chain of communication with the interior will have been forged. Until this railway has been completed, and unless a means can be found of overcoming the difficulties of the bar at the mouth of the Volta, recourse must be had to the road from Accra to Pong. The cost of carrying the material for stern-wheelers over this distance by means of carriers would, if the enterprise were possible at all, be very great, but there is no reason why a road suitable for ox-wagon transport should not be cheaply and expeditiously constructed.

From Pong to Koto there is a clear stretch of navigable water in the rains. At Koto bulk would have again to be broken, but the distance covered by the rapids is very short, and a good road or tramway a mile long would give access to water that would, so far as is known, carry a loaded stern-wheeler for four months of the year to the place chosen as the port of Gambaga.

If it is assumed that the steamers have the modest cargo capacity of 100 tons, a single voyage to this port (from which the charge for a load to Gambaga is 8s.) would represent transport for which under the present system at least £9,500 is paid, and in addition many weeks' delay would be saved.

The steamers would have to be able to maintain a speed of 16 knots an hour in order to make good headway against the current, and would have to burn wood as fuel, but these conditions prevail on other rivers where the experiment of steam transport has proved successful.

Land transport.

Human portage is the slowest and most expensive of all forms of transport, and it is important that a substitute combining economy with celerity should be adopted during the months in which the great rivers are unnavigable. Horse and ox draught are forbidden on account of these animals not flourishing in the districts near the Coast, and pack-transport on these animals and on donkeys is open to the same objections, while both forms of carriage are no more rapid than is that of human transport. There remain only mechanical means

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of conveyance. Of these, when once built, railways are undoubtedly the most efficient, but there are many points to be considered with regard to these. The necessity for easy gradients presupposes the expenditure of time and capital in earthworks; the existence of a considerable trade is necessary in order that a return may be obtained for this outlay and for that of plant; and substantial bridges and culverts have to be built. It is possible that in course of time a trade may be built up that will justify the expenditure necessary for a light railway, but this is not the case at present, and moreover the construction of such a line takes time, and time is a factor of capital importance in anticipating others in the commercial field.

The recent improvements in motor cars suggest these vehicles as a means of transport vastly superior to carriers, and as providing some at least of the advantages of railways without any of their drawbacks. Roads suitable for them can easily be constructed, and where, as in the Northern Territories, the Administration has taken over the chief's power of exacting free labour, the cost of this work is very small. No ambitious bridging schemes need be thought out, for culverts can easily be made locally to bear the weight of a motor car and its load, and the large rivers are so placed that they would naturally be taken as junctions for the car service, the goods being ferried across. The original outlay would be relatively very small, and so also would be the number of men employed in the working of the line. A fair load would be carried each trip and would perform the journey, in favourable circumstances, in one-fifth of the time at present occupied.

There are now in existence in the Northern Territories over 70 miles of made road on which motor cars could without difficulty run at good speed.

Trade tax.

The traders passing through the Northern Territories pay a small tax on every animal intended for sale and on every load of merchandise. The rates were fixed after consultation with the leading merchants, and caravan leaders cheerfully pay the tax in consideration of the immunity it affords them from the casual exactions of the native chiefs. The largest caravan passing through Gambaga in the 1898-99 dry season paid duty on 80 head of cattle, 320 sheep, and 100 donkeys, and the largest through Walewale on 135 head of cattle and 210 sheep.

Currency.

The only currency in use before the British occupation was cowries. Slaves, horses, and cattle were used as a means of currency when large sums had to be transported for a distance, but they also formed regular articles of trade. Cowries are imported from coast merchants, and their value steadily rises as they are carried up country, being about sixpence per 1,000 at Salaga, and double that price at Gambaga. There was at first some hesitation in accepting English silver in payment for goods, and it was used chiefly for the manufacture of ornaments; but when it was found that taxes had to be paid in these tokens,

and that trade goods could be bought with them alone, a better appreciation of their value was formed, and they are now accepted without demur in and near the large towns.

The trade products of the Northern Territories are not likely to influence European markets to an appreciable degree by their export. The cotton and leather goods that find favour in the country itself are coarse and dear, and would find no sale except as curiosities of quite secondary interest. There are herds of elephant in Daboya and Gurunsi, but the native is neither expert nor bold in hunting them, and systematic slaughter would soon exhaust the supply. Indigo and tobacco grows freely, but are only cultivated to supply the modest demands of the inhabitants. Guinea-corn, millet, and moalies yield large crops, and rice grows well in certain localities, but even if there were room for these products in European markets, the price of transport would prove prohibitive of their profitable export. Iron is readily obtained from the rocks in Dagarti and Gurunsi, but distance renders the economic value of these deposits extremely small.

The existence of gold is suspected in certain parts of Dagarti, where the rock formations are similar to those of the auriferous regions in Lobi, but here again the difficulties of transport would absorb the returns from all but fields of phenomenal richness.

It is, however, by no means certain that the country is incapable of producing crops that may ultimately serve to endow it with prosperity. The land is there, labour is plentiful, and the chiefs need but a guiding hand to employ their subjects in profitable work. It cannot, however, be too strongly insisted upon that all initiative must come from the Government. Experimental gardens should be established under expert superintendence, and such plants as appear to be suitable to the soil and climate should be freely distributed among native agriculturists. Especial attention should be directed to the development of indigenous growths, such as cotton, indigo, and tobacco; the apparent success of the amateur experiments with rubber-trees should be encouraged with the aid of technical skill; and efforts should be made to introduce coffee, cocoa, and other tropical products.

Products.

Future possibilities.

CHAPTER VII.—CLIMATE—HEALTH.

General.

THE climate of the Northern Territories is appreciably more merciful than that of the Coast, and it may be assumed that this difference will become more marked in its effect upon the health of Europeans when circumstances admit of the erection of suitable houses, and when cheaper and quicker means of transport facilitate the importation of the necessities of civilised life.

For three months of the year—March, April, and May—the heat is very great, but the air is free from the load of moisture that is so oppressive near the Coast, and there is not the same disposition to languor or the same tendency to overcome it by recourse to stimulants. The rains are heavy, but are not continuous, and during those of 1898 there was no single day on which it was not possible to take a sufficient amount of outdoor exercise without getting wet. The prevalent fever is of a comparatively mild type, and convalescence from it is speedy. The northern districts are the more healthy, and it was noticed that the officers at Kintampo, and in a more marked degree those stationed temporarily at Yeji, suffered more from attacks of malarial fever than their comrades north of the 10th parallel of latitude. The percentage of deaths from climatic causes among the Europeans was very small, and it is noteworthy that the Special Service Officers who went out in 1897, and who proceeded direct to the Northern Territories without making any stay in the unhealthy regions near the sea, remained for 16 months in the country without any appreciable loss of energy. To this result the provision of a good ration by Government very materially contributed, and the plan of having small quantities of each constituent packed in soldered tin cases insured that the contents remained fresh and palatable.

Diseases.

The chief diseases to which Europeans are liable are remittent and intermittent malarial fevers, generally of a mild type, and diarrhoea. The patient recovers rapidly, but suffers from anæmia as an after effect, and in one case neuritis and rheumatism supervened and the patient was invalided. In the opinion of some of the medical officers serving in the Northern Territories anæmia is to be expected after some months' residence in the country even in the case of men who have not had specific attacks of fever. This shows itself in "a slowing of the general circulation, weakening and depression of the nervous system, and a tendency to sluggishness in all the

important organs of the body." In the opinion of the same authorities this tendency can be greatly reduced by improving the accommodation at present provided, by maintaining a supply of tinned fruits and vegetables, and by strict attention to the following rules:—

Moderation should be observed both in eating and drinking. **Health rules.** The medical officers were quite unanimous in rejecting teetotalism as unadvisable, but were emphatic in advising that no stimulant should be taken until the evening meal, and that the quantity consumed then and afterwards should be small.

A small dose of quinine should be taken daily.

Regular exercise is essential to health. All the medical officers were most insistent on this; and one of them went so far as to say that the good health enjoyed by the officers in the Northern Territories, as compared with their brethren on the Coast, was as much due to their taking hard physical exercise as to the superiority of the climate.

Vegetables and fruit should form part of the daily diet.

Water for drinking purposes, and milk, should be boiled for 15 minutes before use.

If possible, exposure to the sun should be avoided between the hours of 10 a.m. and 4 p.m., but the ill-effects of such exposure are greatly reduced by the wearing of suitable head-gear and clothing. The helmet authorised for the Constabulary Officers was universally condemned as affording inadequate protection, and the "Wolsley" pattern was recommended as a substitute for it. Flannel or wool should be worn next the skin, and outer clothing should be light and porous.

The diseases most common among the natives in Government employ are guinea-worm, a mild type of fever, dysentery, and various forms of venereal. Tuberculosis occurs, but is not nearly so common as it is in Europe. Among the natives of the country many cases of gonorrhoea were observed. **Native diseases.**

One case of black-water fever occurred, and the patient, a European, succumbed. This was the only death due to purely climatic causes that took place among the European officials during the 18 months under survey.

In Appendix D are given tables of weather observations **Meteorology.** during 1898. These are rendered necessarily incomplete by the absence of proper instruments, but they serve to give general indications of the seasons, rainfall, mean temperature, &c. A more elaborate record was kept by Captain C. V. R. Wright, South Wales Borderers, and this is printed separately in the appendix.

The three rainy months are July, August, and September, and during this period rain may be expected almost daily. It is generally heavy, and is frequently accompanied by gales of wind, thunder, and lightning, but is seldom continuous throughout the 24 hours. In October the rainy season wears itself out, and in November an occasional shower is all that falls. During this month the Harmattan commences, blowing during the day, but falling at sunset. In December it blows

persistently throughout the day and night, and this condition prevails during January and the first half of February. Rain is of very rare occurrence during the prevalence of the Harmattan. It is a very dry and searching wind, warping even seasoned wood and adversely affecting metals, while it produces very irritating effects on the throat and nose of the human being. It is said to be in other respects beneficial to health, and it certainly is responsible for very chilly nights and mornings. An example of its effect upon atmospheric humidity was recorded at Kintampo by Dr. Elliott on the 26th December, 1898, the reading being 73 at 8 a.m., and only 32 at noon, the saturation point being taken as 100.

In the middle of February the first indication of a change in the weather shows itself in the form of a tornado, and the Harmattan then becomes intermittent, and soon drops altogether. From this time to the end of May the heat is very great, and is only relieved by occasional tornadoes, constantly increasing in frequency, but not affording enough moisture to materially affect the growth of vegetation. June is the most pleasant month of the year. The sun is not oppressive and is tempered by cloudy skies; moderate rains freshen the country and cool the air, and the new growth of grass offers a pleasant change to the eye while it does not yet impede progress on foot in any direction.

Although the climate may be described as fairly healthy for Europeans, and as fit for their occupation for short periods, much remains to be done in introducing the resources of civilisation before permanent residence can be thought of, and it is doubtful whether white men would ever be able to undertake manual labour in the country. There is, however, no necessity for this as the natives could provide labour, and the institution of British rule cannot fail to rapidly increase the proportion of population to area.

The institution of a more speedy and comfortable form of transport than that of a hammock would conduce to health, especially as it would sensibly abridge the time now spent in traversing the unhealthy forest region.

In view of recent discoveries as to the transmission of malarial germs, it may be of interest to note that mosquitoes are not numerous in the higher levels of the country, though they abound during the rainy season near the rivers and wherever standing water is found. In these localities the natives protect themselves from their attacks at night by closing every aperture in their huts, and by lighting fires in order to smoke out any more than usually enterprising insects. To the European the remedy is worse than the disease.

CHAPTER VIII.—SPORT AND NATURAL HISTORY.

By Lieut.-Colonel W. C. GIFFARD.

THE pursuit of shooting and of natural history in the Gold Coast hinterland is probably attended by greater difficulties than in any other part of Africa. The natives are useless as trackers or trappers, the length of the grass during the rains prevents either shooting or collecting for some three months, and the extreme heat limits the time available for outdoor work to a very few hours for about three months more. Besides these drawbacks specimens must be skinned within a few hours after being shot, and the bacon beetle is more numerous and aggressive than in any other part of Africa.

Elephants and buffalo of at least two kinds, occur in Dagomba, Gbrunsi, and between Zankwana and Dawa-dawa, but no specimens were shot, as during our 18 months' stay in the country we never had time to organise a special expedition for big game, so what little shooting we did was either when on the march or within a few hours' ride of Gambaga.

The roan antelope (*Hippotragus gambianus*) is fairly common, but only four specimens were shot; both this antelope and the hartebeeste (*Bobalis major*) are constantly shifting their feeding grounds, and thus are hard to find.

Kobus kob is very local; I only saw them on the White Volta, near Yonga. The reedbuck I shot near Brumasi, but did not bring home a specimen. The lesser reedbuck I shot near Dawa-dawa, it appears rare and local; my specimen was much lighter in colour than the rooi rhebuck of Natal, which it otherwise resembles. The horned bushbuck is distinctly rare in the hinterland, no specimen being procured and not more than six being seen.

The black-tailed ourebi (*Ourebia nigricaudata*) is very common near Gambaga, but seems to be local, and does not extend far towards Kumasi.

The grey duiker, very similar in appearance to that of South Africa, is very rare. I secured the only specimen seen; a small red duiker (*Cephalophus rufatus*), not scarce but shy and hard to get, completes the list of antelopes identified.

Hippo and crocodiles are numerous in all the pools of the Volta, as are fish, but the latter are of few species, useless as food, and hard to catch.

Of game birds the most important are the bustards, of which we procured five kinds, but brought back no specimens. The

largest and next weigh about 20 lbs. and 10 lbs. respectively, with a spread of wing of about 7 feet and 4 feet 6 inches. I have obtained both species in Zululand and think they must be *O. ludeiga* and *O. cafra*.

At Manga, in Moshi, we obtained specimens of all five kinds, the remaining three being the light fawn-coloured bustard speckled with white, which I have obtained in the Eastern Sudan, a bush koorhan, probably *O. melanogaster*, and a smaller koorhan, which I have not before met with.

The guinea-fowl (*N. coronata*) is the commonest bird in the neighbourhood of Gambaga, but does not seem to extend very far towards the coast, as I saw none on the Ashanti side of Yabum. *Francolinus bicalcaratus*, locally known as bush-fowl, is also common; the small black francolin (*Ptilopachys fuscus*) is less so, and a yellow francolin, in size between the two, is both rare and local.

Sand grouse for six months in the year are fairly common but leave to breed; green pigeons and blue rocks of two kinds are also common, with several kinds of dove.

Gecco include the spur-winged and Egyptian, both uncommon, and duck are very seldom seen. We obtained the knob-billed duck (*Sarcidiornis africana*) in Moshi with a small duck rather like a widgeon.

Hares are not scarce, but being suspected of foul feeding are usually let alone.

Perhaps the bag of one gun during 15 months in the hinterland may be of interest, but it must be remembered that circumstances prevented any complete day being devoted to shooting, and very few mornings:—

Elippo	3	Koorhan.. ..	13
Roan antelope ..	2	Guinea-fowl ..	250
Hartebeeste ..	2	Bush-fowl.. ..	101
Reedbuck.. ..	1	Other francolin ..	11
Lesser reedbuck ..	1	Sand grouse ..	12
Ourebi	7	Hares	4
Dnyker	1	Gecco	6
Red dnyker	3	Duck	7
Crocodiles.. ..	2	Pigeon	77
Paauw	18	Plover, &c. ..	54

Total head 676

Turning to natural history we found small mammals very scarce. I have seen no fox, otter, or wild-cat, a few mongooses but no meercats or any of the weasel tribe; a good trapper might have procured a few specimens, but what we obtained were all shot with the exception of some bats caught in burning villages.

The birds were also disappointing, being neither numerous nor brilliant, and few species of butterflies seem to exist outside the forest belt, though between Kintampo and the

coast we obtained some interesting species in April, 1899. We may be considered fortunate to have obtained in such a small collection of mammals four entirely new species besides others of great interest.

The mammals and butterflies were collected by Lieut. Colonel Northcott, C.B., and me, the birds by myself.

NOTES ON NATURAL HISTORY COLLECTION PRESENTED TO THE NATURAL HISTORY MUSEUM.

Antelopes.

1. *Bubalis major*, ♂.—The first entire specimen of this hartebeeste, hitherto only known from skulls obtained in trade.

2. *Hippotragus equinus gambianus*, ♂.—The first full-grown male that has reached this country.

3. *Cephalophus rufilatus*, ♂.—Very little known, only one complete specimen having previously reached this country. Record horns figured in "Proceedings Zoological Society," October, 1899, are those of the specimen brought home by us.

4. *Ourebia nigricaudata*, ♂.

Rodents.

1. *Xerus erythropus*.—Ground squirrel.

2. *Funisciurus annulatus*.—Mongoose-like tree squirrel.

3. *Funisciurus*, spec. nov.—Will shortly be described in "Scientific Journal." A new and very interesting species.

4. *Gerbillus* (species undetermined).—Jumping grass mouse.

5. *Mus erythroleucus*.—Mouse found in kraals.

6. *Arvicanthia abyssinicus*.—Grass mouse.

Shrews.

Crocidura giffardi.—Large dark chocolate-coloured shrew new to science, described in "Annals and Mag. Nat. Hist."

Bats.

1. *Epomophorus macrocephalus*.—Large fawn-coloured fruit bat.

2. *Epomophorus pusillus*.—Small fawn-coloured fruit bat.

3. *Rousettus stramineus*.—Fruit bat of colony.

4. *Megaderma frons*.—Large-eared bat.

5. *Nycteris macrotis*.

6. *Nycteris hispida*.

7. *Chalinoleobus variegatus*.—Leaf-winged bat very scarce, the few specimens known have been taken in such widely-separated districts as Angola, Zambesi, and Uganda.

8. *Scotophilus schlieffeni*.—This is a very scarce bat, only known from one or two specimens from Sierra Leone.

9. *Scotophilus* spec. nov.

10. *Scotophilus* spec. nov.

{ These two new species will shortly be described in "Scientific Journal."

AT THE TRING MUSEUM.

Birds.

The collection contains about 250 specimens and 160 species. It is of special interest as the number of species found from Senegambia to Abyssinia is large in proportion to those which occur near the coast in the West African forest region.

The collection will shortly be worked out scientifically.

Butterflies.

The collection of *Lepidoptera* is also at the Tring Museum. Number of specimens about 500; species comparatively few. Among the most noteworthy are:—

Pseuderesia bicolor.
Euphades perseis.
Pseudacraea hostilis.
Charaxes paphianus, bifunctatus, northcotti, protodes, selica,
and epigonus.
Pseudacraea simulator.
Toracolus ions.
Palla decus.
Cymothoe herminia.
Nymphalis aurantiaca.

Charaxes northcotti is the only new species in the collection, first caught near Gambaga by Lieut.-Colonel Northcott, C.B.

APPENDIX A.

CONVENTION BETWEEN THE UNITED KINGDOM AND FRANCE FOR THE DELIMITATION OF THEIR RESPECTIVE POSSESSIONS TO THE WEST OF THE NIGER, AND OF THEIR RESPECTIVE POSSESSIONS AND SPHERES OF INFLUENCE TO THE EAST OF THAT RIVER.

Signed at Paris, June 14, 1898.

[Ratifications exchanged at Paris, June 18, 1899.]

THE Government of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, and the Government of the French Republic, having agreed, in a spirit of mutual good-will, to confirm the Protocol with its four Annexes prepared by their respective Delegates for the delimitation of the British Colonies of the Gold Coast, Lagos, and the other British possessions to the west of the Niger, and of the French possessions of the Ivory Coast, Sudan, and Dahomey, as well as for the delimitation of the British and French possessions and the spheres of influence of the two countries to the east of the Niger, the Undersigned, his Excellency the Right Honourable Sir Edmund Monson, Ambassador Extraordinary and

LE Gouvernement de Sa Majesté la Reine du Royaume-Uni de la Grande-Bretagne et d'Irlande, Impératrice des Indes, et le Gouvernement de la République Française, ayant résolu, dans un esprit de bonne entente mutuelle, de confirmer le Protocole avec ses quatre Annexes, préparé par leurs Délégués respectifs pour la délimitation des Colonies Britanniques de la Côte d'Or et de Lagos, et des autres possessions Britanniques à l'ouest du Niger, et des possessions Françaises de la Côte d'Ivoire, du Soudan, et du Dahomey, ainsi que pour la délimitation des possessions Britanniques et Françaises et des sphères d'influence des deux pays à l'est du Niger, les Soussignés, son Excellence le Très Honorable Sir Edmund Monson, Ambassadeur de Sa Majesté la

Plenipotentiary of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, accredited to the President of the French Republic; and his Excellency M. Gabriel Hanotaux, Minister for Foreign Affairs of the French Republic; duly authorized to this effect, confirm the Protocol with its Annexes, drawn up at Paris the 14th day of June, 1898, the text of which is as follows:—

Protocol.

The Undersigned, Martin Gosselin, Minister Plenipotentiary and Secretary of Her Britannic Majesty's Embassy at Paris; William Everett, a Colonel in Her Britannic Majesty's land forces and an Assistant Adjutant-General in the Intelligence Division of the War Office; René Lecomte, Minister Plenipotentiary, Assistant Sub-Director in the Department of Political Affairs in the Ministry for Foreign Affairs; Louis Gustave Binger, Colonial Governor, unattached, Director of African Affairs at the Ministry of the Colonies; delegated respectively by the Government of Her Britannic Majesty and by the Government of the French Republic in order to draw up, in conformity with the Declarations exchanged at London on the 5th August, 1890, and the 15th January, 1896, a draft of definitive delimitation between the British Colonies of the Gold Coast, Lagos, and the other British possessions to the west of the Niger, and the French possessions of the Ivory Coast, the Sudan, and Dahomey, and between the British and French

Reine du Royaume-Uni de la Grande-Bretagne et d'Irlande, Impératrice des Indes, près le Président de la République Française; et son Excellence M. Gabriel Hanotaux, Ministre des Affaires Étrangères de la République Française, dûment autorisés à cet effet, confirment le Protocole avec ses Annexes, dressé à Paris le 14 Juin, 1898, et dont la teneur suit:—

Protocole.

Les Soussignés, Martin Gosselin, Ministre Plénipotentiaire, Premier Secrétaire de l'Ambassade de Sa Majesté Britannique à Paris; William Everett, Colonel dans l'armée de terre de Sa Majesté Britannique, et Assistant Adjutant-Général au Bureau des Renseignements au Ministère de la Guerre; René Lecomte, Ministre Plénipotentiaire, Sous-Directeur Adjoint à la Direction des Affaires Politiques du Ministère des Affaires Étrangères; Louis Gustave Binger, Gouverneur des Colonies, hors cadres, Directeur des Affaires d'Afrique au Ministère des Colonies; délégués respectivement par le Gouvernement de Sa Majesté Britannique et par le Gouvernement de la République Française à l'effet de préparer, en exécution des Déclarations échangées à Londres le 5 Août, 1890, et le 15 Janvier, 1896, un projet de délimitation définitive entre les Colonies Britanniques de la Côte d'Or et de Lagos, et les autres possessions Britanniques à l'ouest du Niger et les possessions Françaises de la Côte d'Ivoire, du Soudan, et du Da-

possessions and the spheres of influence of the two countries to the east of the Niger, have agreed to the following provisions, which they have resolved to submit for the approval of their respective Governments:—

ARTICLE I.

The frontier separating the British Colony of the Gold Coast from the French Colonies of the Ivory Coast and Sudan shall start from the northern terminal point of the frontier laid down in the Anglo-French Agreement of the 12th July, 1893, viz., the intersection of the thalweg of the Black Volta with the 9th degree of north latitude, and shall follow the thalweg of this river northward up to its intersection with the 11th degree of north latitude. From this point it shall follow this parallel of latitude eastward as far as the river shown on Map No. 1, annexed to the present Protocol, as passing immediately to the east of the villages of Zwaga (Soanga) and Zebilla (Sebilla), and it shall then follow the thalweg of the western branch of this river up stream to its intersection with the parallel of latitude passing through the village of Sapeliga. From this point the frontier shall follow the northern limits of the lands belonging to Sapeliga as far as the River Nuhan (Nonhan), and shall then follow the thalweg of this river up or down stream, as the case may be, to a point situated 2 miles (3,210 metres) eastward of the road which leads from Gambaga to Tenkrégu (Tingourkou), via Bawku (Bankou). Thence it

homey, et entre les possessions Britanniques et Françaises et les sphères d'influence des deux pays à l'est du Niger, sont convenus des dispositions suivantes, qu'ils ont résolu de soumettre à l'agrément de leurs Gouvernements respectifs:—

ARTICLE I.

La frontière séparant la Colonie Britannique de la Côte d'Or des Colonies Françaises de la Côte d'Ivoire et du Soudan partira du point terminal nord de la frontière déterminée par l'Arrangement Franco-Anglais du 12 Juillet, 1893, c'est-à-dire de l'intersection du thalweg de la Volta Noire avec le 9° degré de latitude nord, et suivra le thalweg de cette rivière vers le nord jusqu'à son intersection avec le 11° degré de latitude nord. De ce point elle suivra dans la direction de l'est le dit parallèle de latitude jusqu'à la rivière qui est marquée sur la Carte No. 1 annexée au présent Protocole, comme passant immédiatement à l'est des villages de Souaga (Zwaga) et de Sebilla (Zebilla). Elle suivra ensuite le thalweg de la branche occidentale de cette rivière en remontant son cours jusqu'à son intersection avec le parallèle de latitude passant par le village de Sapeliga. De ce point la frontière suivra la limite septentrionale du terrain appartenant à Sapeliga jusqu'à la Rivière Nonhan (Nuhan), et se dirigera ensuite par le thalweg de cette rivière en remontant ou en descendant, suivant le cas jusqu'à un point situé à 3,210 mètres (2 milles) à l'est du chemin allant de Gambaga à Tingourkou (Tenkrégu), par

shall rejoin by a straight line the 11th degree of north latitude at the intersection of this parallel with the road which is shown on Map No. 1 as leading from Sansanné-Mango to Pama, via Jebigu (Djebiga).

ARTICLE II.

The frontier between the British Colony of Lagos and the French Colony of Dahomey, which was delimited on the ground by the Anglo-French Boundary Commission of 1895, and which is described in the Report signed by the Commissioners of the two nations on the 12th October, 1896, shall henceforward be recognized as the frontier separating the British and French possessions from the sea to the 9th degree of north latitude.

From the point of intersection of the River Ocpura with the 9th degree of north latitude, as determined by the said Commissioners, the frontier separating the British and French possessions shall proceed in a northerly direction, and follow a line passing west of the lands belonging to the following places, viz., Tabira, Okuta (Okouta), Boria, Tere, Gbani, Ashigere (Yassikéra), and Dekala.

From the most westerly point of the lands belonging to Dekala the frontier shall be drawn in a northerly direction so as to coincide as far as possible with the line indicated on Map No. 1 annexed to the present Protocol, and shall strike the right bank of the Niger at a point situated 10 miles (16,093 metres) up-

Bankou (Bawku). De là, elle rejoindra en ligne droite le point d'intersection du 11° degré de latitude nord avec le chemin indiqué sur la Carte No. 1 comme allant de Sansanné-Mango à Pama, par Djebiga (Jebigu).

ARTICLE II.

La frontière entre la Colonie Britannique de Lagos et la Colonie Française du Dahomey, qui a été délimitée sur le terrain par la Commission Anglo-Française de Délimitation de 1895, et qui est décrite dans le Rapport signé le 12 Octobre, 1896, par les Commissaires des deux nations, sera désormais reconnue comme la frontière séparant les possessions Britanniques et Françaises de la mer au 9° degré de latitude nord.

A partir du point d'intersection de la Rivière Ocpura avec le 9° degré de latitude nord, tel qu'il a été déterminé par lesdits Commissaires, la frontière séparant les possessions Britanniques et Françaises se dirigera vers le nord, et suivra une ligne passant à l'ouest des terrains appartenant aux localités suivantes: Tabira, Okouta (Okuta), Boria, Tere, Gbani, Yassikéra (Ashigere), et Dekala.

De l'extrémité ouest du terrain appartenant à Dekala la frontière sera tracée dans la direction du nord, de manière à coïncider autant que possible avec la ligne indiquée sur la Carte No. 1 annexée au présent Protocole, et atteindra la rive droite du Niger en un point situé à 16,093 mètres (10 milles)

stream from the centre of the town of Gere (Guiris) (the port of Ilo), measured as the crow flies.

ARTICLE III.

From the point specified in Article II, where the frontier separating the British and French possessions strikes the Niger, viz., a point situated on the right bank of that river, 10 miles (16,093 metres) up-stream from the centre of the town of Gere (Guiris), (the port of Ilo), the frontier shall follow a straight line drawn therefrom at right angles to the right bank as far as its intersection with the median line of the river. It shall then follow the median line of the river, up-stream, as far as its intersection with a line drawn perpendicularly to the left bank from the median line of the mouth of the depression or dry water-course, which, on Map No. 2 annexed to the present Protocol, is called the Dallul Mauri, and is shown thereon as being situated at a distance of about 17 miles (27,359 metres), measured as the crow flies, from a point on the left bank opposite the above-mentioned village of Gere (Guiris).

From this point of intersection the frontier shall follow this perpendicular till it meets the left bank of the river.

ARTICLE IV.

To the east of the Niger the frontier separating the British and French possessions shall follow the line indicated on Map No. 2, which is annexed to the present Protocol

en amont du centre de la ville de Guiris (Géré) (port d'Ilo) mesurés à vol d'oiseau.

ARTICLE III.

Du point spécifié dans l'Article II, où la frontière séparant les possessions Britanniques et Françaises atteint le Niger, c'est-à-dire, d'un point situé sur la rive droite de ce fleuve à 16,093 mètres (10 milles) en amont du centre de la ville de Guiris (Géré) (port d'Ilo), la frontière suivra la perpendiculaire élevée de ce point sur la rive droite du fleuve jusqu'à son intersection avec la ligne médiane du fleuve. Elle suivra ensuite en remontant la ligne médiane du fleuve jusqu'à son intersection avec une ligne perpendiculaire à la rive gauche et partant de la ligne médiane du débouché de la dépression, ou cours d'eau asséché, qui, sur la Carte No. 2 annexée au présent Protocole, est appelé Dallul Mauri, et y est indiqué comme étant situé à une distance d'environ 27,359 mètres (17 milles) mesurés à vol d'oiseau d'un point sur la rive gauche en face du village ci-dessus mentionné de Guiris (Géré).

De ce point d'intersection, la frontière suivra cette perpendiculaire jusqu'à sa rencontre avec la rive gauche du fleuve.

ARTICLE IV.

A l'est du Niger la frontière séparant les possessions Britanniques et Françaises suivra la ligne indiquée sur la Carte No. 2, annexée au présent Protocole.

Starting from the point on the left bank of the Niger indicated in the previous Article, viz., the median line of the Dallul Mauri, the frontier shall follow this median line until it meets the circumference of a circle drawn from the centre of the town of Sokoto with a radius of 100 miles (160-932 metres). From this point it shall follow the northern arc of this circle as far as its second intersection with the 14th parallel of north latitude. From this second point of intersection it shall follow this parallel eastward for a distance of 70 miles (112-652 metres); then proceed due south until it reaches the parallel of 13° 20' north latitude, then eastward along this parallel for a distance of 250 miles (402-230 metres); then due north until it regains the 14th parallel of north latitude; then eastwards along this parallel as far as its intersection with the meridian passing 35' east of the centre of the town of Kuka, and thence this meridian southward until its intersection with the southern shore of Lake Chad.

The Government of the French Republic recognizes, as falling within the British sphere, the territory to the east of the Niger, comprised within the above-mentioned line, the Anglo-German frontier, and the sea.

The Government of Her Britannic Majesty recognizes, as falling within the French sphere, the northern, eastern, and southern shores of Lake Chad, which are comprised between the point of intersection of the 14th degree of north latitude, with the western shore

Partant du point sur la rive gauche du Niger, indiqué à l'Article précédent, c'est-à-dire la ligne médiane du Dallul Mauri, la frontière suivra cette ligne médiane jusqu'à sa rencontre avec la circonférence d'un cercle décrit du centre de la ville de Sokoto avec un rayon de 160-932 mètres (100 milles). De ce point elle suivra l'arc septentrional de ce cercle jusqu'à sa seconde intersection avec le 14° degré de latitude nord. De ce second point d'intersection elle suivra ce parallèle vers l'est sur une distance de 112-652 mètres (70 milles); puis se dirigera au sud vrai jusqu'à sa rencontre avec le parallèle 13° 20' de latitude nord; puis, vers l'est, suivant ce parallèle sur une distance de 402-230 mètres (250 milles); puis au nord vrai jusqu'à ce qu'elle rejoigne le 14° parallèle de latitude nord, puis vers l'est sur ce parallèle, jusqu'à son intersection avec le méridien passant à 35' est du centre de la ville de Kuka; puis ce méridien vers le sud jusqu'à son intersection avec la rive sud du Lac Tchad.

Le Gouvernement de la République Française reconnaît comme tombant dans la sphère Britannique le territoire à l'est du Niger compris entre la ligne susmentionnée, la frontière Anglo-Allemande, et la mer.

Le Gouvernement de Sa Majesté Britannique reconnaît comme tombant dans la sphère Française les rives nord, est, et sud du Lac Tchad, qui sont comprises entre le point d'intersection du 14° degré de latitude nord avec la rive occidentale du lac et le point d'incidence sur

of the lake and the point of incidence on the shore of the lake of the frontier determined by the Franco-German Convention of the 15th March, 1894.

le lac de la frontière déterminée par la Convention Franco-Allemande du 15 Mars, 1894.

ARTICLE V.

The frontiers set forth in the present Protocol are indicated on the annexed Maps, which are marked 1 and 2 respectively.

The two Governments undertake to appoint within a year as regards the frontiers west of the Niger, and within two years as regards the frontier east of that river, to count in each case from the date of the exchange of ratifications of the Convention which is to be concluded between them for the purpose of confirming the present Protocol, Commissioners who will be charged with delimiting on the spot the lines of demarcation between the British and French possessions, in conformity and in accordance with the spirit of the stipulations of the present Protocol.

With respect to the delimitation of the portion of the Niger in the neighbourhood of Ilo and the Dallul Mauri, referred to in Article III, the Boundary Commissioners shall, in determining on the spot the river frontier, distribute equitably between the two Contracting Powers such islands as may be found to interfere with the delimitation of the river as defined in Article III.

It is understood between the two Contracting Powers that no subsequent alteration in the position of the median line of the river shall affect the owner-

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ARTICLE V.

Les frontières déterminées par le présent Protocole sont inscrites sur les Cartes Nos. 1 et 2 ci-annexées.

Les deux Gouvernements s'engagent à désigner, dans le délai d'un an pour les frontières à l'ouest du Niger, et de deux ans pour les frontières à l'est de ce même fleuve, à compter de la date de l'échange des ratifications de la Convention qui doit être conclue aux fins de confirmer le présent Protocole, des Commissaires qui seront chargés d'établir sur les lieux les lignes de démarcation entre les possessions Britanniques et Françaises, en conformité et suivant l'esprit des stipulations du présent Protocole.

En ce qui concerne la délimitation de la portion du Niger dans les environs d'Ilo et du Dallul Mauri visée à l'Article III, les Commissaires chargés de la délimitation, en déterminant sur les lieux la frontière fluviale, répartiront équitablement entre les deux Puissances Contractantes les îles qui pourront faire obstacle à la délimitation fluviale telle qu'elle est décrite à l'Article III.

Il est entendu entre les deux Puissances Contractantes qu'aucun changement ultérieur dans la position de la ligne médiane du fleuve n'affectera les

ship of the islands assigned to each of the two Powers by the *procès-verbal* of the Commissioners, after being duly approved by the two Governments.

ARTICLE VI.

The two Contracting Powers engage reciprocally to treat with consideration ("bienveillance") the native Chiefs who, having had Treaties with one of them, shall, in virtue of the present Protocol, come under the sovereignty of the other.

ARTICLE VII.

Each of the two Contracting Powers undertakes not to exercise any political action in the spheres of the other, as defined by Articles I, II, III, and IV of the present Protocol.

It is understood by this that each Power will not, in the spheres of the other, make territorial acquisitions, conclude Treaties, accept sovereign rights or Protectorates, nor hinder nor dispute the influence of the other.

ARTICLE VIII.

Her Britannic Majesty's Government will grant on lease to the Government of the French Republic, for the objects, and on the conditions specified in the form of lease annexed to the present Protocol, two pieces of ground to be selected by the

droits de propriété sur les îles qui auront été attribuées à chacune des deux Puissances par le *procès-verbal* des Commissaires, dûment approuvé par les deux Gouvernements.

ARTICLE VI.

Les deux Puissances Contractantes s'engagent réciproquement à traiter avec bienveillance ("considération") les Chefs indigènes qui, ayant eu des Traités avec l'une d'elles, se trouveront, en vertu du présent Protocole, passer sous la souveraineté de l'autre.

ARTICLE VII.

Chacune des deux Puissances Contractantes s'engage à n'exercer aucune action politique dans les sphères de l'autre, telles qu'elles sont définies par les Articles I, II, III, et IV du présent Protocole.

Il est convenu par là que chacune des deux Puissances s'interdit de faire des acquisitions territoriales dans les sphères de l'autre, d'y conclure des Traités, d'y accepter des droits de souveraineté ou de Protectorat, d'y gêner ou d'y contester l'influence de l'autre.

ARTICLE VIII.

Le Gouvernement de Sa Majesté Britannique cédera à bail au Gouvernement de la République Française, aux fins et conditions spécifiées dans le modèle de bail annexé au présent Protocole, deux terrains à choisir par le Gouvernement de la Ré-

Government of the French Republic in conjunction with Her Britannic Majesty's Government, one of which will be situated in a suitable spot on the right bank of the Niger between Leaba and the junction of the River Moussa (Mochi) with the former river, and the other on one of the mouths of the Niger. Each of these pieces of land shall have a river frontage not exceeding 400 metres in length, and shall form a block, the area of which shall not be less than 10 nor more than 50 hectares in extent. The exact boundaries of these pieces of land shall be shown on a plan annexed to each of the leases.

The conditions upon which the transit of merchandise shall be carried on on the Niger, its affluents, its branches and outlets, as well as between the piece of ground between Leaba and the junction of the River Moussa (Mochi) mentioned above, and the point upon the French frontier to be specified by the Government of the French Republic, will form the subject of Regulations, the details of which shall be discussed by the two Governments immediately after the signature of the present Protocol.

Her Britannic Majesty's Government undertake to give four months' notice to the French Government of any modification in the Regulations in question, in order to afford to the said French Government the opportunity of laying before the British Government any representations which it may wish to make.

publique Française de concert avec le Gouvernement de Sa Majesté Britannique, dont l'un sera situé en un endroit convenable sur la rive droite du Niger entre Leaba et le confluent de la Rivière Moussa (Mochi) avec ce fleuve, et l'autre sur l'une des embouchures du Niger.

Chacun de ces terrains sera en bordure sur le fleuve sur une étendue de 400 mètres au plus, et formera un ténement dont la superficie ne sera pas inférieure à 10 hectares ni supérieure à 50 hectares. Les limites exactes de ces terrains seront indiquées sur un plan annexé à chacun des baux.

Les conditions dans lesquelles s'effectuera le transit des marchandises sur le cours du Niger, de ses affluents, de ses embranchements et issues, ainsi qu'entre le terrain ci-dessus mentionné situé entre Leaba et le confluent de la Rivière Moussa (Mochi), et le point à désigner par le Gouvernement de la République Française sur la frontière Française, seront l'objet d'un Règlement dont les détails seront discutés par les deux Gouvernements immédiatement après la signature du présent Protocole.

Le Gouvernement de Sa Majesté Britannique s'engage à donner avis quatre mois à l'avance au Gouvernement de la République Française de toute modification dans le Règlement en question, afin de mettre le dit Gouvernement Français en mesure d'exposer au Gouvernement Britannique toutes représentations qu'il pourrait désirer faire.

ARTICLE IX.

Within the limits defined on Map No. 2, which is annexed to the present Protocol, British subjects and British protected persons and French citizens and French protected persons, as far as regards their persons and goods, and the merchandize the produce or the manufacture of Great Britain and France, their respective Colonies, possessions, and Protectorates, shall enjoy for thirty years from the date of the exchange of the ratifications of the Convention mentioned in Article V the same treatment in all matters of river navigation, of commerce, and of tariff and fiscal treatment and taxes of all kinds.

Subject to this condition, each of the two Contracting Powers shall be free to fix, in its own territory, and as may appear to it most convenient, the tariff and fiscal treatment and taxes of all kinds.

In case neither of the two Contracting Powers shall have notified twelve months before the expiration of the above-mentioned term of thirty years its intention to put an end to the effects of the present Article, it shall remain in force until the expiration of one year from the day on which either of the Contracting Powers shall have denounced it.

In witness whereof, the undersigned Delegates have drawn up and signed the present Protocol.

Done at Paris, in duplicate, the 14th day of June, in the year of our Lord 1898.

(Signed) MARTIN GOSSELIN.
WILLIAM EVERETT.
RENÉ LECOMTE.
G. BINGER.

ARTICLE IX.

A l'intérieur des limites tracées sur la Carte No. 2, annexée au présent Protocole, les sujets Britanniques et protégés Britanniques, les citoyens Français et protégés Français, pour leurs personnes comme pour leurs biens, les marchandises et produits naturels ou manufacturés de la Grande-Bretagne et de la France, de leurs Colonies, possessions, et Protectorats respectifs, jouiront pendant trente années à partir de l'échange des ratifications de la Convention mentionnée à l'Article V, du même traitement pour tout ce qui concerne la navigation fluviale, le commerce, le régime douanier et fiscal, et les taxes de toute nature.

Sous cette réserve, chacune des deux Puissances Contractantes conservera la liberté de régler sur son territoire et à sa convenance le régime douanier et fiscal et les taxes de toute nature.

Dans le cas où aucune des Puissances Contractantes n'aurait notifié douze mois avant l'expiration du terme précité de trente années son intention de faire cesser les effets du présent Article, il continuera à être obligatoire jusqu'à l'expiration d'une année à partir du jour où l'une ou l'autre des Puissances Contractantes l'aura dénoncé.

En foi de quoi, les Délégués soussignés ont dressé le présent Protocole et y ont apposé leurs signatures.

Fait à Paris, en double expédition, le 14 Juin, 1898.

Annexes 1 and 2.

Maps Nos. 1 and 2.

Annex 3.

Although the delineation of the lines of demarcation on the two maps annexed to the present Protocol are supposed to be generally accurate, it cannot be considered as an absolutely correct representation of those lines until it has been confirmed by new surveys.

It is therefore agreed that the Commissioners or local Delegates of the two countries, hereafter appointed to delimit the whole or part of the frontiers on the ground, shall be guided by the description of the frontier as set forth in the Protocol.

They shall, at the same time, be permitted to modify the said lines of demarcation for the purpose of delineating them with greater accuracy, and also to rectify the position of the watershed, roads, or rivers, as well as of towns or villages indicated on the maps above referred to.

Any alterations or corrections proposed by common consent by the said Commissioners or Delegates shall be submitted for the approval of their respective Governments.

(Signed) MARTIN GOSSELIN.
WILLIAM EVERETT.
RENÉ LECOMTE.
G. BINGER.

Annex 4.

Form of Lease.

1. The Government of Her Britannic Majesty grants in lease to the Government of the

Modèle de Bail.

1. Le Gouvernement de Sa Majesté Britannique cède à bail au Gouvernement de la Répu-

French Republic the piece of land situated

of the Niger River, having a river frontage in length, and forming a block of hectares in extent, the exact boundaries of which are shown on the plan annexed to this lease.

2. The lease shall run for thirty years uninterruptedly, commencing from the

, but in case neither of the two Contracting Powers shall have notified twelve months before the expiration of the above-mentioned term of thirty years its intention to put an end to the present lease, it shall remain in force until the expiration of one year from the day on which either of the Contracting Powers shall have denounced it.

3. The said land shall be subject to the laws for the time being in force in the British Protectorate of the Niger districts.

4. A portion of the land so leased, which shall not exceed 10 hectares in extent, shall be used exclusively for the purposes of the landing, storage, and transhipment of goods, and for such purposes as may be considered subsidiary thereto, and the only permanent residents shall be the persons employed in the charge and for the security of such goods, their families, and servants.

5. The Government of the French Republic binds itself—

(a.) To fence in that portion of the said land referred to in

blique Française un terrain situé du Niger, ayant en bordure du fleuve un développement de

, et formant un tènement d'une superficie de hectares, dont les limites exactes sont indiquées sur le plan annexé au présent bail.

2. Le bail aura une durée de trente années consécutives à partir de

, mais, dans le cas où aucune des Parties Contractantes n'aura notifié douze mois avant l'échéance du terme susmentionné de vouloir son intention de mettre fin au présent bail, le dit bail restera en vigueur jusqu'à l'expiration d'une année à partir du jour où l'une ou l'autre des Parties Contractantes l'aura dénoncé.

3. Le dit terrain sera soumis aux lois en vigueur pendant cette période dans le Protectorat Britannique des districts du Niger.

4. Une partie du territoire ainsi cédé à bail, et dont l'étendue n'excédera pas 10 hectares, sera utilisée exclusivement pour les opérations de débarquement, d'emmagasinage et de transbordement des marchandises, et pour toutes fins pouvant être considérées comme subsidiaires à ces opérations, et les seuls résidents permanents seront les personnes employées pour le service et la sécurité des dites marchandises, avec leurs familles et leurs domestiques.

5. Le Gouvernement de la République Française s'engage—

(a.) A clore la partie du dit terrain mentionnée à l'Article 4

Article 4 of this lease (with the exception of the side which faces the River Niger) by a wall, or by a stockade, or by any other sort of continuous fence, which shall not be less in height than 3 metres. There shall be one door only on each of the three sides of the fence.

(b.) Not to permit on the said portion of land the receipt or exit of any goods in contravention of the British Customs Regulations. Any act in violation of this stipulation shall be considered as evasion of customs duties, and shall be punished accordingly.

(c.) Not to sell nor allow the sale of any goods in retail in the said portion of land. The sale of quantities less in weight or measure than 1,000 kilog., 1,000 litres, or 1,000 metres is held to be sale in retail. It is understood that this stipulation shall not apply to goods in transit.

(d.) The Government of the French Republic, or its sublessees or agents, shall have the right to build on the said portion of land, warehouses, houses for offices, and other buildings necessary for the operations of landing, storing, and transhipping goods, and also to construct on that part of the foreshore of the River Niger comprised in the lease, quays, bridges, and docks, and any other works required in connection with the said operations, provided that the designs of all works so to be constructed on the foreshore of the river are furnished to the British authorities for examination, in order to ascertain that these works would not in any

du présent bail (à l'exception du côté bordant le Niger) par un mur ou par une palissade ou par toute autre sorte de clôture continue, dont la hauteur ne sera pas inférieure à 3 mètres. Il n'y aura qu'une seule porte sur chacun des trois côtés de la clôture.

(b.) A ne pas permettre, dans la dite partie de terrain, la réception ou la sortie d'aucune marchandise en contravention avec les Règlements Douaniers Britanniques. Tout acte fait en violation de cette stipulation sera considéré comme équivalent à une fraude de droit de douane, et sera puni en conséquence.

(c.) A ne pas vendre ni autoriser à vendre des marchandises au détail sur la dite partie de terrain. La vente de quantités d'un poids ou d'une mesure inférieure à 1,000 kilog., 1,000 litres, ou 1,000 mètres, sera considérée comme vente au détail. Il est entendu que cette stipulation n'est pas applicable aux marchandises en transit.

(d.) Le Gouvernement de la République Française, en ses sous-locataires ou agents, auront le droit de construire, sur la dite portion de terrain, des magasins, des maisons pour bureaux, et tous autres édifices nécessaires pour les opérations de débarquement, l'emmagasinement, et le transbordement des marchandises, et également de construire, dans la partie de l'avant-rivage du Niger comprise dans le bail, des quais, des ponts, des docks, et tous autres ouvrages nécessaires en vue des dites opérations, pourvu que les plans de tout ouvrage à construire, ainsi sur l'avant-rivage du fleuve soient communiqués pour examen aux autorités

way inconvenience the navigation of the river, or be in conflict with the rights of others or with the Customs system.

(c.) It is understood that the shipping, landing, and storing of goods on the said portion of land shall be conducted in all respects in accordance with the laws for the time being in force in the British Protectorate of the Niger districts.

6. The Government of the French Republic binds itself to pay annually to Her Majesty's Government, on the 1st January of each year, a rent of 1 fr.

7. The Government of the French Republic shall have the right to sublet the whole or any portion of the land passing under this lease, provided that the sub-lessees shall not use the land for any other purposes than those stipulated in this lease, and that the said Government shall remain responsible to the Government of Her Britannic Majesty for the observance of the stipulations of this lease.

8. The Government of Her Britannic Majesty binds itself to fulfil towards the lessees all duties incumbent upon it as owner of the said land.

9. At the expiration of the term of thirty years specified in Article 2 of this lease, the French Government, or its sub-lessees, may remain in possession and in the enjoyment for a period of time which, together with the said terms of thirty years, shall not exceed ninety-

Britanniques, afin que vérification puisse être faite que ces ouvrages ne sauraient en aucune manière gêner la navigation du fleuve, ni être en opposition avec les droits de tiers ou avec le système Douanier.

(c.) Il est entendu que l'embarquement, le débarquement, et l'emmagasinement des marchandises sur la dite partie de terrain seront effectués, à tous égards, conformément aux lois alors en vigueur dans le Protectorat Britannique des districts du Niger.

6. Le Gouvernement de la République Française s'engage à payer annuellement au Gouvernement Britannique, le 1^{er} Janvier de chaque année, un loyer de 1 fr.

7. Le Gouvernement de la République Française aura le droit de sous-louer tout ou partie du terrain faisant l'objet du présent bail, pourvu que les sous-locataires ne fassent usage de ce terrain à d'autres fins que celles stipulées dans le présent bail, et que le dit Gouvernement demeure responsable envers le Gouvernement de Sa Majesté Britannique de l'observance des stipulations du présent bail.

8. Le Gouvernement de Sa Majesté Britannique s'engage à remplir à l'égard du preneur à bail toutes les obligations qui lui incombent en sa qualité de propriétaire du dit terrain.

9. A l'expiration du terme de trente ans spécifié à l'Article 2 du présent bail, le Gouvernement Français, ou ses sous-locataires, pourront rester pour une période qui, cumulée avec le dit terme de trente ans, n'excèdera pas quatre-vingt-dix-neuf ans, en possession et jouis-

nine years, of the constructions and installations which shall have been made on the leased land. Nevertheless, the Government of Her Britannic Majesty reserves to itself, on the expiration or determination of the lease, in accordance with the conditions specified in Article 2, the right of purchasing such constructions and installations at a valuation to be determined by experts who will be appointed by the two Governments, on the understanding that notification of their intention be furnished to the French Government ten months, at latest, before the expiration or determination of the lease. In case of disagreement between them, the experts shall choose a referee, whose decision shall be final.

In calculating the value of the above-mentioned constructions and installations, the experts shall be guided by the following considerations:—

(a.) In the event of the lease expiring at the end of the first thirty years, the purchase value of the property to be sold shall be the full market value.

(b.) In the event of the lease being determined at any time after thirty years, the value of the property to be sold shall be the full market value less a fraction, whose numerator shall be the number of years the lease has run, minus thirty, and whose denominator shall be sixty-nine.

10. The land comprised in the lease shall be measured and marked out without delay.

11. If a difference of opinion should arise between the two Governments as to the interpretation of the lease, or as to

sance des constructions et installations qui auront été faites sur le terrain cédé à bail. Toutefois, le Gouvernement de Sa Majesté Britannique se réservera, à l'expiration ou à la mise à terme du présent bail survenue dans les conditions spécifiées à l'Article 2, le droit de racheter à dire d'experts, qui seront nommés par les deux Gouvernements, les dites constructions et installations, moyennant une notification de son intention soit donnée au Gouvernement Français, au plus tard dix mois avant l'expiration ou la mise à terme du bail. En cas de dissentiment entre eux, les experts désigneront un tiers Arbitre, dont la décision sera définitive.

Pour calculer la valeur des constructions et installations ci-dessus mentionnées, les experts se guideront d'après les considérations suivantes:—

(a.) Dans le cas où le bail expirerait à la fin des trente premières années, la valeur de rachat des biens sera la pleine valeur marchande.

(b.) Dans le cas où le bail cesserait postérieurement au terme de trente ans, la valeur à payer sera la pleine valeur marchande, moins une fraction, dont le numérateur sera le nombre d'années qu'aura duré le bail, diminué de trente, et dont le dénominateur sera soixante-neuf.

10. Le terrain compris dans le bail sera arpenté et délimité sans retard.

11. Dans le cas où une différence d'opinion surgirait entre les deux Gouvernements sur l'interprétation du bail ou sur

any matter arising in connection therewith, it shall be settled by the arbitration of a juriconsult of third nationality, to be agreed upon by the two Governments.

(Signed) MARTIN GOSSELIN.
WILLIAM EVERETT.
RENÉ LECOMTE.
G. BINGER.

The present Convention shall be ratified, and the ratifications exchanged at Paris within the period of six months, or sooner if possible.

In witness whereof the Undersigned have signed the present Convention and have affixed thereto their seals.

Done in duplicate, at Paris, the 14th June, 1898.

(Signed) EDMUND MONSON.
G. HANOTAUX.

PROTOCOL PROLONGING THE PERIOD FOR THE EXCHANGE OF RATIFICATIONS.

Signed at Paris, December 8, 1898.

THE Undersigned, his Excellency the Right Honourable Sir Edmund Monson, G.C.B., Ambassador Extraordinary and Plenipotentiary of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, to the President of the French Republic; and his Excellency

tout autre sujet se rapportant à ce bail, la question sera réglée par l'arbitrage d'un juriconsulte d'une nationalité tierce, désigné d'accord par les deux Gouvernements.

La présente Convention sera ratifiée, et les ratifications en seront échangées à Paris dans le délai de six mois, ou plus tôt si faire se peut.

En foi de quoi les Soussignés ont signé la présente Convention, et y ont apposé leurs cachets.

Fait à Paris, en double exemplaire, le 14 Juin, 1898.

LES Soussignés, son Excellence le Très Honorable Sir Edmund Monson, G.C.B., Ambassadeur Extraordinaire et Plénipotentiaire de Sa Majesté la Reine du Royaume-Uni de Grande-Bretagne et d'Irlande, Impératrice des Indes, près le Président de la République Française; et son Excellence

M. Delcassé, Minister of Foreign Affairs of the French Republic, duly authorized to this effect, have agreed as follows:—

The delay of six months, fixed by the Convention of the 14th June, 1898, for the exchange of the ratifications of the said Convention, is extended by six months and increased to one year.

Done at Paris, in duplicate, this 8th day of December, 1898.

(L.S.) (Signed) EDMUND MONSON.
DELCASTÉ.

M. Delcassé, Ministre des Affaires Étrangères de la République Française, dûment autorisée à cet effet, sont convenus de ce qui suit:—

Le délai de six mois, fixé par la Convention du 14 Juin, 1898, pour l'échange des ratifications de la dite Convention, est prorogé de six mois et porté à une année.

Fait en double, à Paris, le 8 Décembre, 1898.

DECLARATION.

Signed at London, March 21, 1899

[Ratifications exchanged at Paris, June 13, 1899.]

THE Undersigned, duly authorized by their Governments, have signed the following Declaration:—

The IVth Article of the Convention of the 14th June, 1898, shall be completed by the following provisions, which shall be considered as forming an integral part of it:—

1. Her Britannic Majesty's Government engages not to acquire either territory or political influence to the west of the line of frontier defined in the following paragraph, and the Government of the French Republic engages not to acquire

LES Soussignés, dûment autorisés à cet effet par leurs Gouvernements, ont signé la Déclaration suivante:—

L'Article IV de la Convention du 14 Juin, 1898, est complété par les dispositions suivantes, qui seront considérées comme en faisant partie intégrante:—

1. Le Gouvernement de Sa Majesté Britannique s'engage à n'acquérir ni territoire ni influence politique à l'ouest de la ligne-frontière définie dans le paragraphe suivant, et le Gouvernement de la République Française s'engage à n'acquérir

either territory or political influence to the east of the same line.

2. The line of frontier shall start from the point where the boundary between the Congo Free State and French territory meets the water-parting between the watershed of the Nile and that of the Congo and its affluents. It shall follow in principle that water-parting up to its intersection with the 11th parallel of north latitude. From this point it shall be drawn as far as the 15th parallel in such manner as to separate, in principle, the Kingdom of Wadai from what constituted in 1882 the Province of Darfur; but it shall in no case be so drawn as to pass to the west beyond the 21st degree of longitude east of Greenwich (18° 40' east of Paris), or to the east beyond the 23rd degree of longitude east of Greenwich (20° 40' east of Paris).

3. It is understood, in principle, that to the north of the 15th parallel the French zone shall be limited to the north-east and east by a line which shall start from the point of intersection of the Tropic of Cancer with the 16th degree of longitude east of Greenwich (13° 40' east of Paris), shall run thence to the south-east until it meets the 24th degree of longitude east of Greenwich (21° 40' east of Paris), and shall then follow the 24th degree until it meets, to the north of the 15th parallel of latitude, the frontier of Darfur as it shall eventually be fixed.

4. The two Governments engage to appoint Commissioners who shall be charged to delimit on the spot a frontier-line in

ni territoire ni influence politique à l'est de cette même ligne.

2. La ligne-frontière part du point où la limite entre l'État Libre du Congo et le territoire Français rencontre la ligne de partage des eaux coulant vers le Nil de celles qui s'écoulent vers le Congo et ses affluents. Elle suit en principe cette ligne de partage des eaux jusqu'à sa rencontre avec le 11° parallèle de latitude nord. A partir de ce point elle sera tracée jusqu'au 15° parallèle de façon à séparer en principe le Royaume de Ouadai de ce qui était en 1882 la Province de Darfour; mais son tracé ne pourra en aucun cas dépasser à l'ouest le 21° degré de longitude est de Greenwich (18° 40' est de Paris), ni à l'est le 23° degré de longitude est de Greenwich (20° 40' est de Paris).

3. Il est entendu en principe qu'au nord du 15° parallèle la zone Française sera limitée au nord-est et à l'est par une ligne qui partira du point de rencontre du Tropique du Cancer avec le 16° degré de longitude est de Greenwich (13° 40' est de Paris), descendra dans la direction du sud-est jusqu'à sa rencontre avec le 24° degré de longitude est de Greenwich (21° 40' est de Paris), et suivra ensuite le 24° degré jusqu'à sa rencontre au nord du 15° parallèle de latitude avec la frontière du Darfour telle qu'elle sera ultérieurement fixée.

4. Les deux Gouvernements s'engagent à désigner des Commissaires qui seront chargés d'établir sur les lieux une ligne-

accordance with the indications given in paragraph 2 of this Declaration. The result of their work shall be submitted for the approbation of their respective Governments.

It is agreed that the provisions of Article IX of the Convention of the 14th June, 1898, shall apply equally to the territories situated to the south of the 14° 20' parallel of north latitude, and to the north of the 5th parallel of north latitude, between the 14° 20' meridian of longitude east of Greenwich (12th degree east of Paris) and the course of the Upper Nile.

Done at London, the 21st March, 1899.

(L.S.)
(L.R.)

(Signed)
(Signed)

frontière conforme aux indications du paragraphe 2 de la présente Déclaration. Le résultat de leurs travaux sera soumis à l'approbation de leurs Gouvernements respectifs.

Il est convenu que les dispositions de l'Article IX de la Convention du 14 Juin, 1898, s'appliqueront également aux territoires situés au sud du 14° 20' de latitude nord, et au nord du 5° degré de latitude nord entre le 14° 20' de longitude est de Greenwich (12° degré est de Paris) et le cours du Haut-Nil.

Fait à Londres, le 21 Mars 1899.

SALISBURY.
PAUL CAMBON.

Appendix B.

VOCABULARIES.

LANGUAGE	COMPILER OF VOCABULARY.
Dagomba	Lieut.-Col. H. P. Northcott, O.B.
Mampruli	Major the Honble. C. G. Fortescue.
Moshi	Captain W. C. Giffard.
Wa	Captain C. V. Wright.
Gurusi	Assistant Inspector M. W. Hawtrey.
Daboya	Assistant Inspector F. E. Bishop.
Bole	Assistant Inspector Armstrong.

Booked
Bed, to go to
Bed

[illegible]

English.	Dagamba.	Mamprusi.	Moshi.	Wa.	Guramal.	Daboya.	Bola.
Collect	tigugo	ntigilame	tigema	lanta	aba	n'aruna	bulamo
Come	kanna	chumma	waka	kiwa	abla	baba	baba
Command	disuala	tituguba	kasama	sengho	nokvia	n'tingima	ura
Compel	lingmakwengo	omarentwengo	yapanga	asapiua	forwenti	wurukumu	himanya
Complain	marletokosuga	waleyatowa	kwebe	damo kovana	véwabawa	halla	mesa kamalega
Condemn	isama samabumba	densia	intirakwa	yebionani	akoté	fenebel	tsirama
Confess	diylannori	famambasi	konya	mirribu	animfoi	medar	femalagabonu
Confine	ozangusologwe	trigama	puganya	yepokiti	orenanga	opamu	tanyili
Consider	intengrami	tugesi	leberani	otuma	abungawa	n'fara	imiera
Continue	lebinanama	etnasazena	leberani	otuma	wodi	sankama	impaso langana
Convict	dibangryelinwenga	ikelmangni	obebena	agala	inkwebana	fyipch	fuat
Cook	dogobo	yantoni	roti	agala	asungawo	bevale	dango
Copy	gwaminisobi	ampiani	gaboti	peima	m'baraka	m'baraka	tsirama
Correct	wilic a	naia	vabota	polina	veuroi	atane	tsirama
Cost	awalla	ala	pasona	ada dila	kunivagali	atane	tsirama
Cough	kwoggo	unkosun	koogo	koriga	akula	ewase	tsirama
Count	edoma	mbonia	ndi	serri	agale	eka	inkaraga
Crash	inlana	babalara	faka	tsaba	aga	onyong	inyamba
Cure	akong	dirini	abelafi	bara	vékatua	opiti	inyaladia
Curse	mandam	babangui	awénami	untwi	ovazé	obian	fatigima
Cut	gama	kwarguma	wagi	unmargi	ogoné	okumu	inko
Dance	sorbo	jungo	sambo	asiara	iseé	epil	inkyfo
Dare	instongwe	kanangwala	sunkema	dabenchibbi	obunga	orania	yakeni
Dazzle	nyaganango	wutungukuka	untolida	nimbuanqwalla	nivé	tentembri	inkoni imbun
Deceive	oyotianiraba	mawalaziri	beligilame	yelamunani	ogaroi	tonar	seda

Decide	ngulugwahada	malua	abidamo	entuna	abakun	n'fere	imiere
Declare	diyeliya	mbooi	samawutu	eyelama	achega	kali	kali
Deepen	tumboko	kobulga	ntudaboko	kudolya	sava	mittiker	kwinkin
Defy	nukwendi	bunge	kwatongo	wadenimidi	kutia	n'kia	malapamimborufo
Delay	kwagobemi	yuya	kwatame	atiri	omegua	n'birrimu	awo
Deliver	inangombasi	ntu	inchesa	teriba	alaponu	okurugo	fokwa
Demand	inokodanumidi	mbohi	socobande	susi	jobadé	miakeni	anyimima
Demolish	sama	mani	tanamo	entungumara	kothuga	tsirapa	tsirapa
Deny	lyuti	inastirhali	tanamé	nokviani	kutia	obether	nyadama
Depart	dibaregya	akungkachi	wilipataba	kangara	bape	mekadai	bayo
Depose	divian	kurrua	obija	bakira uga	balawa	mekarraga	imbomfa kura
Deprive	toegori	hamu	obijakame	tonodibbi	balotua	osoroma	nesimo
Describe	signa	shiguntiga	sigi	keychiani	otatia	obligo	isaso
	ozemasinga	yungumani	inamamano	gangana	iamafai	dorito	mbaye toroma
Deserve	ditwasaga or	unugdele	atoga	unboirakanga	awuzoukwa	idanko	idanko
Desire	kalatogga	untahu	mbolame	bungamabura	jina	mesa	mesa
Destroy	mbordamhali	isania	metame	aino	ochowunka	mayarraga	igaga
Detail	diama	inayia	asimisi	esdu	aboweté	n'joje	ambawatuli
Detain	yi'suma	zanguma	bokoma	kangachora	ajima	omomba	ilonfa
Detect	zangozimma	inayia	akashi	atawani	avoua	mbabisi	nifofo
Devour	manyetotini	gusantingwa	mb'adabun	volibo	ojinowéjoja	mban	nifra
	oditwasago	dimolongo	ordilifa	pinu	otiga	ewu	fuwa
Die	owendani	ipa	achia	tabu	bo	bogali	intra
Dig	okaba, or ochiani	yumbilobori	atadami	ulimasori kanga	vtara	meungipa	giaso
Direct	itukuma, or tuba	akiasanga	atere soy, mawliga	pelatiri	duru	tripe	isila
	owilgima	akiasanga	gite orier, yetaramisiyi	kuboria	onuna		
Dirty	bandiagodo	binai	iyafikoto				
Disappear	onadidagodo	patami	ekaiye				

VERB.

English.	Dagomba.	Mamprui.	Moshi.	Wa.	Gurusi.	Daboya.	Bola.
Discover	nyaya	iniya	nyilani	bobana	hiakona	lawuna	yedimba
Disgrace	ingmainyane	nerri	aninginyandi	vi	banunawa	niesingyol	ilankama
Dismis	karombasi	uharo	nyayandi	yayari	baléwa	byor	bayo
Dispute	badigya	yanzvomi	ashtatiba	feribo	bajedung wa	emore	rikitee
Distribute	disabuni	yatapuri	mpiribiani	niello	natawa	hieko	chegi
Divide	perina	pergundé	zansatiba	usogoku baja	tona	boroko	ankuto
Do	malina	kingma	manida	yiba	avanga	yagi	mane
Drag	takna	loania	taka	kitakki	apodi	haharrugi	eful
Dream	maname	naami	zambade	unganguni	atoka	edare	idare
Drill	manukori	wa	...	walibon	abera	m'bal	katcha
Drink	yuna	uma	na	kinya	otia	manu	kanu
Drown	kwadima	kundia	dékalano	mula	oniakwéwa	n'twijuma	inchal
Drunk, to get	eyuni	minutigi	anekalano	kulu	sonajowa	oho	isanopo
Earn	mpatorami	iniya	apamia	kustana tuntana	surina	katchakomole	suma
Eat	soitanami	dima	di	diba	wodiu	flawe	gi
Elect	ditiguan	yandimi	nyakiye	idi	allovuta	enuparr	lana
Emancipate	zangengundi	namanga	baso	enaklamina	perbin	clempa	indi
Embrace	nkwasinobogima	mpavmasia	moboga	kora	apana	malhuba	bonato
Employ	nzangutkma	yatabochi	daka	tama	akatiwa	karuma	ayo kasinto
Encamp	manmadoto	mbolia	senkwo	tamu	tikili	kabba	akana
End	dissia	mamborrelli	sayi	baru	doni	alugo	alue
Endeavour	bordermini	salani	manane	entukabasi	yazasana	rania	lakeni
Enjoy	bordermini	nunguyung	entia	namo	asida	arwal	menfo
Enslave	dinoma	wari	awumongo	pekkiyemmi	akaba	kaoya	perkina
Entrap	mandabri	yeninglari	namayamba	laba	totojanona	karpante	ekuru

Envy	{ dikima dibardum }	nzua	kanomija	biri	achirinu	miasa	nyian wona
Escape	dijola	zona	aelame	oborra	oladiri	ohili	esile
Evacuate	diyatinga	mumpadam	aseya	uyia	manikudi	olena	koumbo
Exaggerate	mwadane	yekelane	nerkaiye	niyu mborri	katatutu	kanbel	femlagrum
Exclude	digma	nakana	abinyirone	mobodio	bajottutu	lerifu	sun mba
Execute	yikoma	itama	apaguri	umauzu	afowa	mom	takapo
Expect	bangya	ungusouri	to di, mania	tieso	adwajowa	yumbita	yumbita
Expel	taknakwengo	digoma	mengetano	karaga	aliwa	hameabyo	idisi
Explode	dapukringa	pusoma	indigilani	kurt	mingawa	opante	amarakuto
Extend	yalqna	toma	weisauke	kalortanu	avanka	tienta	amobarakuto
Exterminate	ekrunia	kolabanga	ayowoko	yubu	alilla
			asaminfa				
			asampa				
Facilitate	maimabalum	manabaling	imadotoko	kgimpansa	onka	mimobumun	mewie
Fall	ekuntumale	okontomale	kasika	kontaya	owanku	mantin	menting
Fall	chuya	yandiani	alwiya	yallo	katolia	n'tor	imbrace
Fall	nkodapa	pooni	pigu	uye	kudor	fadili	fadili
Fat	dunabidyeri	kummanani	nuliri	nolu	oberwaandi	omingi	mbore
Fatigue	dunabidyeri	onamsia	amanigi	umballa	odarduraga	kaban	ebin
Favour	obangidimbia	osangyenitima	mankeidami	nimbe	ajinapowawa	misomu	gafara
Fear	obangidimbia	obangyenitima	mankeidami	nimbe	ajinapowawa	misomu	gafara
Fear	danabarba	dabimarwa	debimbara	unjura	adiroi	mingaunum	ifopo
Feed	managunda	bodumu	debimbara	daabang	apinawa	suma jibi	ingimoy
Feign	omaltutogo	omarne	manuikoto	golu	oyagwa	lange	man yakafa fenyu
Fence	enclase, igilagoma	girgoma	enclase, obigilane	oboberi	magiri	ankabum	kudin
Fetch	with sword, chiana	zangwa	with sword, arilawowa	seyja alalanta	ngirri	miengommu	kanu
Fetter	sonkoma	ningwa	taloga	talua okuna	ocidoti	yatanba	wormu tenaki
Fight	bang	ningwa	onigibanga	leba	chira	okirumu	mayo kusa
	dimorda	zahremi	amodama	lari	bananadua	kulu	
Fill	singpidima	palma	ningepogi	opalia	qatola	dorra	talwi

VERBS.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bale.
Find	igisana	mabura	boda	nyaba	oyonga	yekeni	yakeni
Fire	chegwoma	wema	gwa, unweabogun set fire, begunniga	miraba	amupia	otu	to
Fish	egwamizuma	indiala (nimni)	ninkadome	nyojuma	ojananga	konkuntili	burege efal
Fix	tunakaha		achema	melia	borua		yalong kupuro
Flatter	grunayeri	bolmasuvayuri	asachanga	bello	ogayoi	kuyerihi	infalum
Play	sima	sema	tanyallum	achoi	betie	kawol	kangne
Pre	ijemahali	yikma	sigudame	usobori	odria	oshile	ishile
Priest	koupafia	yasema	asakia	deala	kugoyini	esase	mino
Prod	fibua	bunna	weya	nangue	na	hri	brimo
Flow	komata	zuara	patuya	kompali	boasua	obeshile	tulowi inawow
Fly	dirila	zua	aitame	egabai	koniri	ofrige	ekwaso
Fold	pilima	pilma	ayia	neogvuri	bujila	obor	kata
Forge	daborobandiro	mbordame	chindoba	ge atiburdibo	siago	minaseni	yafini agisif
Forbid	padalamali	ntokosa	damani	ekomakki	xineli	masawura	sanonomo
Force	omakwemusigu	kwemzugu	amandupanga	piung	tonda	yileasa	setipfo
For	dabima	dugoma	amininchi	kwomparbasi	nyinana	n'chita	basakfo
Forfeit	odoya	zangoboni	obdiegafi	faba	umoiwana	n'lol	inkofao
Forget	ninya	ntania	nimani	efusa	asoi	n'lasu	menyikodu
Fortify	uganla	ozombasama	imima	ballo	okoivora	masamu	ibetokamin
	ojidigalaga	nwalakurage	anweyikadan	tabtkoonni	oidia	atukur	yalonge
Frown	oanlanaga	oanonega	asamani	asaningli	ogrenawa	ninbo	inyabo
Gain	nurabui	onilabone	siogdo	tona	ankuniro	tona	lanye
Gallop	didoeda	nkantimi	ayikda	karaba	odirizanaana	milan	inchokula
Gamble	tirifiga	tantia	tastaga	etiabangha	omukusi	biri	beri

Gather	etigima	tisoma	amakadame	malibe	hojapatakadani	inbel	kelili
Germinate	diyagoda	syibidafa	syibidafa	mala	tanunga	arkor	fa
Get	mpina	mpania	mpania	denderunkuma	banli	yanta	nya
Give	ntio	toma	mantea	unkwunkuma	jompowa	n'ummu	suna
Gnaw	nwapila	zuama	duma	kiora	awgura	obiawe	indo
Go	chegma	kama	wabe	kigila	drella	bior	bio
Go back	chegma por	kama por	chegpori	leopoli	overkoi	laang kamma	yumbeta rumla
Go on	degnakori	kama	chegpori	ganmituri	overdura	bior	kyasufu
Govern	chegmadangbonni	banuritel	akaterebonye	yankiburaga	overdura	biorde	ekonlo eis
Grab	tengdun	banuritel	katerebonye	goba	asina	damsara	inomo
Grant	fama	banuritel	katerebonye	goba	asina	basin	impecoso
Grasp	basinlo	banuritel	katerebonye	goba	asina	basin	surra
Graz	basinlo	banuritel	katerebonye	goba	asina	basin	surra
Greet	dingwadayamno	banuritel	katerebonye	goba	asina	basin	surra
Grieve	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Grin	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Grind	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Grow	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Growl	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Grumble	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Guard	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Guide	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Halt	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Have	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Handle	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Hang	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Hapen	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Harden	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Harm	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Hate	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Haul	idiladani	banuritel	katerebonye	goba	asina	basin	surra
Haunt	idiladani	banuritel	katerebonye	goba	asina	basin	surra

88

³ To understand. There appears to be no word for "hearing a noise."

Lighten
Lighten (storm)

[illegible]

Heuriah	malawosogo osobia tasuma	yiguma tasuma	ahita tisa	tigabu unio isilbe	yanyu onapawa	kayapwale joma	megugibi membitimo
Obey	untungya unkwonsaki	ondiyeltoga untumile	ahigesa intatule	yumbo tabu rabilla	oohaga ave	bierao etol	nino iyabo
Oblige	malmasi	nakwe	do fang, nifidida compt, malmkomá	evrennia	yapawa	kalisimo	kalisimo
Obstruct	palla	yima	damanboda	de attiyilla	bagala	kaluge	intayili apato
Occupy	nchings	inkinga	inchings	liabo kunkin	basijina	menewota	takikimo
Offend	onyanyeli	osanyia	asamia	sagala onas-	agwewa	kumunparama	kafo
Offer	kimbaboi	nakwe	Kifimalafale	sagala akkoma	otiga	asumu	menyinfo
Omit	bayindi	mbasina	'mbinsale	ebora	ase	'basu	liarabomo
Open	etengima	pakma	pako	ebu	oauru	flugi	buge
Operate	wanyayin	onua dani	awigame	chabo	ojungwé	karier	kwo
Oppose	osanguina	dizasia	makasaga	kerama agri	bachinchunga	m'non	timpano
Oppress	malanungwendi	kwensaki	makasame	piri kokuba	kola	aypigima	tsayilo
Order	otolesadia	dumame	afasia	orella	fofatsua	y'vrima	mesawo
Outbid	otokomatorogo	dakunore	inchiesiba	weisi	odjima	harburuge	metosao
Outrank	digigiga	dunwarabonsaki	asungu	ti yipili	otakwai	boku	kobelumakin
Overawe	gama	afiduma	afiduma	ayilo	sagawa	n'gwashi	kofo kwana
Overcome	ibikabali	afiduma	afiduma	ayilbo	kuokwena	egomo	intoti
Overflow	kombenjam	dilagapure	apidima	opali engwo nigi	basowa	kwuluge	mund amaga
Overbear	dirumungyewahali	daktingtong	inchelugutis	uchella awoma	kitasia	n'un	asiga
Overload	oninymachobali	oninreyaga	agasiwasogo	yerevni	saida	or-tiru	iediga
Overasleep	oganhali	ogushaiyaga	asigawusogo	venna koga	opéda	ofcharr	
Pecky	akusamasendi	dirugusilasugri	manigi	fara	olwé	nyise	kaso kutongolo
Peck	masugoma	boma	tingi	lagho	bagai	yabuge	mekiri aso
Peel	shuma	ningma	'ningdame	venna kopali	kasa	kobolla	tanakon nose

Trot
Point
Polem
Poleson
Pound
Practice
Prize
Tray
Precede
Predict
Prepare
Present (arms)

[illegible]

27Digitized by Google

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Salute	diipoda	poona	paan	fasana	ojinawa	n'chora	imbo
Satisfy	insurumia	drunda	avungu	tégaba	odona	katuma	imata
Save	maudeata	dema	newe, bigamo	asara	naajewa	moloma	inkwa
Say	toma	de	gom	ya	oani	gyer	iyee
Scatter	biingra	meoma	life, diaringa	bafwilen	bañaf	kocho	kiraga
Scorch	dagwedapumpun	akwesidami	fiagzi	osanya	meduma	kocho	kubechan
Scrape	pinna	niesema	kweko	paan	gweni	baslie	ibikange
Scratch	sagona	niesamayinga	nisa	kwasu	ozofra	woole	meko
Scram	luguma	derantia	zágum	openni	bangua	putie	metaki
Search	ijema	weboma	yariga	mbodame	argua	bañen	nefin
Secure	degua	biingnapam	mandaya	gadakomi	abasan	bañen	meso
Seduce	oblagummi	omayargumaziri	mbinglami	neopoli	abasan	fikilima	kadoko
Seek	mborda	mboda	mbadame	gatakla	bañen	bañen	mesatosoko
Seize	akosodami	dema	indigame	onyoya	yili	yili	impeto
Sell	akosodami	dobla	apagame	okwesi	oyagori	yañ	intan
Send	atoma	tuma	tuma	antoni	ononwa	n sange	augana
Sentence	biingyilla	bourna	agomagande	berri	batroi	sumutu	newong
Separate	biingyilla	lweigoma	awelagame	faro	bañari	bañe	ibangato
Sew	biingyilla	sema	setame	sierbo	bañari	bañe	imba
Shake	sema	sema	sema	dermo	basanga	bungbung	imbunglin
Share	polima	sango	mandina	purbo	bañari	menchige	amberato
Sharpen	selidina	saroma	ese	salo	bañari	ier	metia
Shave	sama	pogma	pogma	pomo	odnjé	bañer	mebe
Shelter	pogma	fungoma	lode	noda	kolu	page	bata
Shiver	niinudema	niinudigida	pili	ori	waridomama	kiertier	kebul

Shoot	arrog, tomas	tona	arrog, } ton	mimerifa	ota	tomu	to
Shout	chellina	kelma	gus, mwe	tanu	kodné	ponte	kashe
Shove	tusima	tusima	kase	dabu	deto	nyimma	nin
Show	diwelligda	zougwiga	wiliga	wulu	guburo	kanuu	meninge
Shut	paoma	paoma	awanga	yogpoghi	opinka	ti	bawi
Sick to be	obidammi	obanda	akasiembo	obira	osara	kolor	melaw
Silent, to be	gyandagani	balma	akasiembo	akasiembo	osara	tiki	ewei
Sing	yelamaberi	ayilma	ayilama	ayilama	ayilama	lo	hupo
Sink	diingie	konvuluma	alimame	ayilama	ayilama	kaña	mebung
Sit down	isina	isima	siaga	ayilama	ayilama	unni	katapaw
Skin	agoma	sema	siaga	ayilama	ayilama	kina	kana
Sleep	gama	dopolma	gande	ayilama	ayilama	babier	intale
Slip	osilagani	osilagani	gande	ayilama	ayilama	iddi	di
Smash	mwagoma	domwala	awilame	ayilama	ayilama	brerahi	inehara
Smoke	nina	ondatabruku	ayilama	ayilama	ayilama	talior	nefomo
Suare	tatlangyuri	oblatong	tonga	ayilama	ayilama	tu	lobale
Sneeze	foroma	wormama	anyokanzemze	ayilama	ayilama	kaperna	iginbo
Soften	mandibulum	malmbulum	abogosa	ayilama	ayilama	otetsho	kimoma
Sow	buluma	bourna	ayilama	ayilama	ayilama	potopoto	mesapaw
Speak	tokluma	tona	ayilama	ayilama	ayilama	da	medo
Spend	osandiligi	osandiligi	ayilama	ayilama	ayilama	kanalaga	memalaga
Spill	tirelbo	tupoma	ayilama	ayilama	ayilama	anodore	igagun
Spin	awidilanda	awidilanda	ayilama	ayilama	ayilama	adaguntu	adaguntu
Spit	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Split	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Spring	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Sprinkle	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Spr	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Squeeze	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Stagger	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu
Stand	tasatokoredu	tasatokoredu	ayilama	ayilama	ayilama	adaguntu	adaguntu

English.	Dagomba.	Kamprul.	Moshi.	Wa.	Gurumal.	Daboya.	Bole.
Share	{ likinjoma anginjessi }	{ oyaseya }	agotowoso { from surprise, adigemya on journey, dichendame }	kabu	zigiyana	loo	keni
Start	{ odiginya }	{ ichengna }	{ kwamiri unwelligdame }	teu issa	wuso	saba	yungo
Starve	{ onimilakum unqoudalagoudi }	{ kumaro }	{ anukane }	sadi kommiyel danyige }	nians mwinani }	etirpa firikana }	akung kasibe }
Steal	{ onelami amoundi }	{ oxodami dibba }	{ anukane }	yali kommiyel danyige }	sediana kunwana }	eya odumu }	cu ebitofe }
Sting	{ dimalanyaga }	{ dassamoxaga }	{ apongye apongidame }	onora	kula	kobirdafe	edufe
Stir	{ onundami odumadami }	{ oyia }	{ dande }	tañibi	siwuta	obierwul	barataw
Stop	{ basuna }	{ basuna }	{ besi }	ekwo arri	kozigila	piñ	nesi
Straggles	{ obingya }	{ oburia }	{ anodugame }	o uyugen	kerida	becharr	epajaw
Strangle	{ webogumakokwerri }	{ evanokokwerri }	{ neukakokwerri }	malini	kanobiana	torapa	epinaw bullo
Stretch	{ tinguma }	{ tiema }	{ tinge }	aluri	vanga	par	esantaw
Strike	{ mweo }	{ nwaia }	{ wai }	maye	nierna	biri	biri
Strip	{ pidgumakwarogo }	{ pidgoma }	{ asagame }	yagi	sepanuta	delego	deligi
Strun	{ mwigilalayam }	{ mwigila }	{ awetichanga }	anello	omorda	ferkirin	yili
Submit	{ inakna }	{ atwa }	{ saakia }	batrapengwo	velule	fangwura	totowaso
Succeed	{ mpabagani mpama }	{ apaia }	{ to be successful, apamia to the throne, etc., adifada }	betongme	asiruini	faiya masara	inya
Suck	{ nyeuma }	{ nuna }	{ nium }	mobo	baliniri	tinina	meno
Buckle	{ kimbihiri }	{ kimbihiri }	{ kimbihiri }	asumuri	neilli	ayung	kanpo
Buffer	{ nyelayeli }	{ opayele }	{ zahma }	balo	kapowa	kerbera	emora
Snuff	{ maraboma }	{ dipira }	{ unira }	yeyo	koda	oweto	kise
Snuffcate	{ mbeugadilami }	{ toksoma }	{ akimbisica }	batomvusa	ariduna	yahi	harago
Suggest	{ didingidiam }	{ wigwiam }	{ intingidame }	taggah gacha	vetaberoi	yimano	yimano
Suit	{ diasogo }	{ sagayibokwe }	{ yabgi edbu }	umbomborachebbi	ajinawunku	kerbangkukaye	kowale
Sulk	{ cumpaya }	{ omandeleankanaro }	{ dagonye }	untananoiri	mingawana	manwura	maser
Summon	{ obogadi inolinjiri }	{ masagkina }	{ nabofia }	telegatanoggo	babawmana	tinina	terimo

Superintend	manijesoba	manigisoba	namingetoba	karua	velumba	lachura	mekinaso
Supply	{ ankoba }	{ kollaboni }	{ chesa }	okwalati	tipoba	a'kalia	meko
Support	{ manungunda }	{ masungunda }	{ mangunda }	learo	apawa	misomnu	brimo
Suppose	{ ditingida }	{ otingida }	{ intingida bota }	tatisso	panusi	arfece	metama
Surpass	{ ungawa }	{ ntua }	{ yirifo }	innagomba	kokana	a'chomana	mebota
Surrender	{ mpodilami }	{ ntindowanizami }	{ seukofaraga }	okloroni	velotoku	seuda	meklige
Suspect	{ mpasanyenizanguma }	{ ntindowanizami }	{ avolinga }	entekunaza	youchoiakoma	wancha	kumkano
Swallow	{ volna }	{ owaloja }	{ adugadame }	voll	irwa	min	min
Swear	{ tumaboku }	{ osoya }	{ adugadame }	karala me	tui	usahi	musabong
Sweat	{ mweniga }	{ owenia }	{ mweniga }	karala me	du	a'leir	gobur
Sweep	{ makogumi }	{ tolomama }	{ asirigame }	turo	tiloma	kerbela	tabile
Swin	{ odukadilami }	{ piama }	{ piama }	aduba	asirigame	sege	fore
Take	{ zangna }	{ datsin }	{ dikla }	di	tiwunku	ta	ta
Take place	{ yeloweia }	{ dapsia }	{ yeliweia }	zienna	nakiomna	menaba	ababa
Talk	{ gona }	{ toama }	{ yeliweia }	yella yella	basui	kanalaga	malaga
Tame	{ marumabaling }	{ tagama }	{ etabanun }	millimbu	basui	a'diang	malaga
Taste	{ loma }	{ tagama }	{ yemisi }	lendi	dinunsi	dende	funo
Teach	{ wama }	{ zansoma }	{ izanzabidame }	wali	ohiramasu	bakrama	dankui
Tear	{ toliso }	{ chingoma }	{ chingi }	chin	karunta	hanga	nini
Tell	{ beligoma }	{ yelo }	{ agonda }	zuri	wa	kama	mebowi
Tempt	{ malaketa }	{ di bebo }	{ unbeligadame }	kona inga	ba	malaga	malaga
Testify	{ malaheia }	{ imulakota }	{ unbeligadame }	nakulaba	ba	oflana	oflana
Thank	{ mpasida }	{ imulakota }	{ unbeligadame }	uwa yen	ba	keratating	ungwo
Think	{ mpasida }	{ imulakota }	{ unbeligadame }	anjoro	binif	keratating	medipus
Throw	{ lobagidama }	{ lobaga }	{ lobaga }	tiesso	dungwa	me-yalaga	ebille
Throw away	{ sangbasi }	{ sangbasi }	{ dikilobaga }	lawbasi	globovira	tanleyer	tanto
Tie	{ sinma }	{ sinma }	{ sinma }	bugali	voi	ma ler	tiao
Tighten	{ simmakwango }	{ simmakwango }	{ simmakwango }	ei	jawa	karre	kiri
						burage	intoa

Act -
Ass
Assistance
Assessment

[illegible]

SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bola.
Behaviour	monogo	oyelala	ayawata	miabbo	lebonkh	bajaban	chorina
Bell	lonri	lonre	lonri	bellinche	bembé	kedolombie	moshung
Bellows	agworga	agworga	forungu	zugdagi	valuguvana	facuma	idi
Belly	paga	lula	paga	pur	loro	ipun	epun
Bird	nuna	lula	nuna	loli	derici	kebabie	kabibi
Bitch	bambilla	salbere	peri, bakka	gari	janiqueri	gheley	kubera
Blade	bainyanga	bainyanga	korie, salaberi	banyangha	vohal	joniche	kauanabi
Blame	magorri	alhawle	seganori	zobli	ehi	kefantar	enkala
Blaze	yelberi	yale	yali	yelmara	iminibetuba	awurufom	nene
Blood	bovitum	begunziridame	tunga	ruelle	cial	idichi	ido
Blow	zim	zim	butum	zien	insumabi	nkalang	inkila
Bone	gure	gure	wei	nyien	insumabi	nkalinu	brumo
Book	kombere	kombere	kori	kori	hangoli	kobie	kowite
Bosom	galo	galo	krani	krani	lung	bako	bako
Boulder	apola	apola	nya	nya	illa	kabone	kabone
Boundary	pichega	pikasenga	pinga	kurri	daubru	ingumbe	ingumbe
Boundary	twana	tunga	tunga	peng	saang	bangeto	imponkore
Bowels	tapo	tapo	piha	piha	edaka	korogay	kuta
Box	nyidi	nyidi	ponyaha	tanneri	jodudah	korpancholo	epun
Branch	sanioo, piaga	sanioo	sanioo	adaka	adaka*	dakar	eful
Bread	dayigadi	dayigadi	diakre	danuri	paro	kechakato	liribing
Bread	nyidi	nyidi	nyidi	kurizina	palapumo	kepebeyar	katsan
Breath	mihida	mihida	mihida	kaza	illa	masa	geil
Breeze	biisa	niorgo	anyogo	ayebbie	illa	kasara	akanto
Brick	sohogo	m'vucda	aridame	vomon	poth	kevilina	mevosi
	tampigri	tampigri	piemsum	sasie	taplumo	sasier	efu
			tampiga				ese

Bride	faduleba	pokopala	fagapala	padade	boljon	sunguru	iki
Brightness	piobo	dapienda	apidame	omali	olia	erfu	kosonoko wale
Brink	piudi	kwondunde	nori	omali	forini	kabba	agwa
Brood	awawila	ningwovodo	nab	konuri	etokoma	braba	kanaba
Brow	ngwawadi	zaidada	ningwobodo	manisanga	etokoma	kasaku	asidito
Bruise	dinedigana	zaidada	nab	konuri	etokoma	kutcha	eyir
Bull	gila	walefo	walefo	manisanga	etokoma	kutcha	kaupelan
Bull	laga	walefo	walefo	manisanga	etokoma	kutcha	kutcha
Bundle	ziba	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Burial	mumbu	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Burn	nyoma	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Burrow	magulangori	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Bush	kaungo	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Butcher	kwasa	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Butter	bankwan	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Buzzard	dulugu	ziba	ziba	manisanga	etokoma	kutcha	kutcha
Calf	sagabilla	sagabilla	cor, nagabilla	nabie	navia	canabie	kanabi
Calinness	balim	omatabalum	of ley, liliya	barriyeng	viliki	finyite	duiding
Camp	puilon	puilon	ayesachap	barriyeng	viliki	finyite	duiding
Canoe	beliga	zongo	zongo	barriyeng	viliki	finyite	duiding
Cap	beliga	zongo	zongo	barriyeng	viliki	finyite	duiding
Captive	pagila	zongo	zongo	barriyeng	viliki	finyite	duiding
Captor	pagila	zongo	zongo	barriyeng	viliki	finyite	duiding
Capture	pagila	zongo	zongo	barriyeng	viliki	finyite	duiding
Cave	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida
Carpet	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida
Cattle	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida
Cave	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida	manjeida

* First word is Gurusi word for "bat."

[illegible]

English.	Dagomba.	Wamprusa.	Koshi.	Wa.	Gurmal.	Daboya.	Note.
Obb							
Obkivation	wedumbiga	wedumbisi	abiga	sumpombilli	hah-dormalle	kebbie	jungase
Cure	managodi	puni	betabo	batibu	umpala	edappo	inyengadibi
Current	domago	dison	apamla	kabu	masuduri	kadruah	china
Current	kwonori	kwonore	kwonjela	kwansuri	Elipala	hatchubal	fang
Current	mwibigo	wonini	wenane	tubu	emasa	ebobuakofoko-	naba
					kor		
Crashion	furkanga	dafeni	furkanga	sukogo	singicé	koppatie	kauputo
Out	mwagoma	wama	chiaga	mya	ming	bochia	iaho
Dagger	saga	sasa	saga	gwaa	aié	tokobie	chute
Dance	saga	hato-oda	uma	apali	gobila	hakunicha	kwoncho
Dance	yilgo	dyendani	obaudame	asia	lagoro	metoto	metoto
Danger	yeliberi	yelmaro	sana	pabbia	vava	fordorfoowo	inbuka
Danger	ika	ika	ikanta	logi	ming	testenbie	boro
Daash	kumi	aketa	hata	anun	ampamudi	otama	meto
Daughter	mbigula	mbigula	mbata	ambira	hahori	h kurubie	impibi
Down	utogomoya	mbata	mbata	ambira	hahori	h kurubie	impige
Day	day	day	day	day	torpoo	hahori	h kurubie
Dealer	kwasa	kwasa	kwasa	kwasa	williri	hahori	h kurubie
Deash	obediponi	obediponi	obediponi	obediponi	williri	hahori	h kurubie
Death	dinkane	dinkane	dinkane	dinkane	hahori	hahori	hahori
Death	ohia	ohia	ohia	ohia	hahori	hahori	hahori
Debt	onarandepa	onarandepa	onarandepa	onarandepa	hahori	hahori	hahori
Debit	onarandepa	onarandepa	onarandepa	onarandepa	hahori	hahori	hahori
Decent	mbeligidummi	mbeligidummi	mbeligidummi	mbeligidummi	hahori	hahori	hahori
Deceasy	onandoyinsi	onandoyinsi	onandoyinsi	onandoyinsi	hahori	hahori	hahori
Decision	dikwayi	otobia	otobia	otobia	hahori	hahori	hahori
Defeat	diliba	diliba	diliba	diliba	hahori	hahori	hahori
Defence	dema	manashori	manashori	manashori	hahori	hahori	hahori

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Discussion

[illegible]

SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Fault	iyelwenga	iyelwendi	yyeli	yeliberri	numbion	penuschie	alibi
Favourite	nongumboni	mibordo	abeneri	ayuma	tsanganga	miangana	mesum
Fear	dabem	maldebem	daba	dabeta	tsangana	miangana	kangana
Feast	pagoma	otigadibu	amungamunde	amant	boina	monasa agbie	kafe
Feather	kwibiri	kobro	kogodo	okila	chira	kofabie	kete
Fee	firigo	farrago	pegafado	koma kwon	desunachu	lada	towasi
Fellow	nobungo	nabengo	abuliso	gara	zuri	kayowrie	kefal
Fetter	kanga	kanga	kanga	beni	sanga	kayuma	ebe
Few	diamkorsi	atamukwendi	mbisefatila	siri	ati	berkinetarr	nin
Fever	wori	ware	penaimwema	inawari	waro	arwo	fiwir
Fight	zabiri	tapo	mori	tamo	gorra	kulla	eman
Figure	munogo	stender, siyendi	agiliane	siman	miton	shinabie	tenton
Fifth	dagodi	diagre	diagre	diagre	duri	y'upie	durte
Fine	agiesiamdi	unkwesano	intitapansando	libama	infoton	menasao	kutso
Finger	nushilla	nushilla	nugubila	nabilli	yufumbia	konertilibio	shilapi
Fire	bagum	bagum	bagum	booh	mung	edai	edai
Firmness	masiga	obila banum	banum	dapingia	odiu	nyer	kolara
Fish	nindo	semalo	minda	nani	nawang	ebli	ebli
Fish-book	grasaga	grasaga	grasaga	ditte	geawung	konotio	kruntibi
Fist	anjuga	ngujiruga	anjuga	nabilli	gugulung	anyoug	dimbe
Fit	siyilanga	clothing, disem- miali	aningilimmetulu	nitlor	awaton	kerbungu	meto
Flag	tabbiri	tabbiri	tabbiri	janon	ganu	ferunka	lalamba
Flame	kwitum	kwitum	kwitum	kwitum	manza	edierwollawolla	faba
Flesh	ayaga	ayaga	ayaga	sanifigila	monponi	nupar	inape
Fight	dibenyakna	lutuna	iyanga	eganni	niranang	enu	eyriaban
			jei	ole	intra	n'foie	eshile

Flint	charbo	charbo	cherboa	cherbua	poohirbu	charbo	kerato
Flood	kwombuqum	kwombuqum	pidano	kompari	buqala	borbuggar	tubala
Flour	zon	zon	izom	sonh	mu	n'ufa	kurra
Flower	tipula	podu	podu	banpari	kanu	y'sorr	kutoto
Fly	zosi	zosi	zosi	naziri	gi	edor	kusomambi
Fallow	biyuridimani	dipokoda	nimpogodo	nuparibo	gokwuli	bechalla	gimpampo
Folly	yakanzali	dibamarian	yakanzadi	bako wallimani	leirru	kumunuparama	ewilopo
Food	diba	diba	libo	zima	odirri	ajibi	agibi
Foot	yama	yama	yama	zoli	lankuaniang	ewulpa	figura
Foot	nor	nor	nowale	berri	napirri	kyia	lia
Force	kwema	kwema	panga	parabi	tua	wurra	medbanwora
Fort	adugailano	dagorona	dagoradine	twon iba	tilli	bessa	lirabin
Fortified	dingri	dingri	dingri	gis	kuia	kasator	kasataw
Forest	woni	woni	wigge	ta	chiku	kopor	kapo
Fort	uruga	nanga	nanga	nos mingha	adung	bochio	kwesi
Freedom	nangumbasi	hangamanguli	hangamanguli	fazoa	adung	bior	efwi
Friend	zori	haruma	haruma	esao mingha	alaban	a tierlio	enaya
Frog	pranda	bilungorgo	bilungorgo	kwantiri	ura	pullon	chiri
Front	tona	tona	tona	esimbi tiri	ana	kaman	kabonta
Broth	peda	peda	peda	figgoli	pung	kwoya	fruma
Furn	pedanacuga	pedanacuga	pedanacuga	osanga nigge	abaladuaug	botranabie	ana-shito
Fruit	tibishi	tibishi	tibishi	da womma	guinung	arsulisu	chiki
Fuel	danu	bontuguluga	ang	duri	dai	kermasie	indibi
Fuel	daro	muma	siagabo	bandia kuri	lua	barlongna	kei
Funeral	angona	muma	siagabo	bandia kuri	lua	barlongna	kei
Gale	soyogo	soyogo	soyogo	sest piengha	kuli	kerwuwuna	efo
Jallop	wedzisi	wefamashale	wedzisi	uriyella	werri	banga	eshilo
Gamo	didi-nelamni	didi-nelamni	play, diun	bibio	kuiang	biri	epil
Gesture	lobalangu	lobalangu	lobalangu	trino nane	atatondu	formakenima	bata
Ghost	chena	chena	chena	sefa	chiri	kesanyi	gidum

SUBSTANTIVES.

English.	Dagomba.	Mamprisi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Giant	maroballi	weganga	awaguna	ninkpienna	labia	tentia	eebun
Glitter	sungda	piloro	abadam	ovialle	puni	diggie	abekolaw
Glutton	obilla bera	inungelubale	pidame	di yafana	indian	berjigor	figga
Goat	baga	pi	piaba	unani	bong	kaboy	kabwi
Goat	naveni	navendi	piabina	unani	owt	boirai	ebore
Goat	sanun	sanuna	sanun	berbi	sanuna	onga	shun
Goose	namengo	namengo	namengo	kabbie	minna	lung	apomural
Goat	pagodo	boyendi	kamuna	bogu	kitta	kubie	aboya
Granary	padoni	pilugu	bari	myoa	garra	kulu	kalanani
Grass	modo	yandc	peligu	suri	garra	kutifilo	iga
Grasshopper	aya	mordc	for horses, yando	boggi	kan	jafalogo	kuri
Grave	yogo	swiya	sia	akwenna	bo	kolonku	inkan
Grief	derabma	yargc	abina	akwenna	lowena	abrie	webia
Groin	inw'derri	dibendc	piende	atallon	purri	impachara	ibyan
Ground	wa Jkema	urikomr	wefabba	yokina	gagana	banglupa	ebampo
Growl	tuga	tuga	tuga	tingha	tilla	konhie	saunole
Grunt	diogo	lawesida	bagwesi	umpombiella	non	jonusi	emora
Guard	bagwesi	diogo	diokumtum	pen	kmai	ofata	ewose
Guest	bagwesi	bagwesi	diokumtum	logari diddib	atung	moylinga	inril
Guide	bagwesi	bagwesi	diokumtum	logari diddib	arube	mayachana	agibi
Gull	bagwesi	bagwesi	diokumtum	logari diddib	atung	mayachana	agibi
Guinea-fowl	bagwesi	bagwesi	diokumtum	logari diddib	atung	mayachana	agibi
Gun	bagwesi	bagwesi	diokumtum	logari diddib	atung	mayachana	agibi
Gunpowder	bagwesi	bagwesi	diokumtum	logari diddib	atung	mayachana	agibi
Habit	bagwesi	bagwesi	diokumtum	logari diddib	atung	mayachana	agibi

Hair	krebodo	of the head, sobodo	sobodo	zakwillo	ui	emin	emi
Half	biagori	single hair, kobodo	biakka	kali	olau	barrato	kuba
Hand	nusi	bu, biagare	nusi	nu	gan	enu	eno
Handful	angubanga	nugbanga	nugbanga	notampa	ganirra	m'jam	ekirimo
Handkerchief	baboka	piendi	piendo	fatila	gaurra	kimmu	chimo
Hardship	changa	babaga	chatinga	tonkwana	yaidu	egpolabis	aarafa
Hare	awamba	krengo	samba	songha	zonga	longa	pante
Harm	bou	namingto	bun	toira	ingabian	ongemema	puntima
Harvest	supella	supella	supella	kikaba	boiche	neroo	tunge
Haste	tato	supella	supella	sewa	vela	malang	meshamina
Hat	obunomani	supella	supella	atipali	ipu	lagha	kworo
Hatred	seliga	supella	supella	abu	aliguan	kopankarada	notisi
Hawk	zugu	supella	supella	dwa	ittok	lambe	kasori
Head	chakanga	supella	supella	zu	nu	kummu	kumo
Health	tampuri	supella	supella	kingha	ngingra	donkinfu	eyirito
Heap	tungri	supella	supella	dura	sangoli	epie	bela
Heart	togologo	supella	supella	seago	beliang	lagbonie	kabine
Heat	supella	supella	supella	tolon	telanga	kerilla	kasode
Heaven	notari	supella	supella	zaboni	iai	issu	kasi
Heel	notari	supella	supella	berri sanparri	napari	kiapi	kumoko
Height	dwamhali	supella	supella	waggi	anaboi	oent'ag	tudo
Heir	bagwoko	supella	supella	na asobuna	basani	kappate	kapite
Herb	wasumpugudi	supella	supella	wasoma	kinfa	yampa	chuniao
Hard	radio	supella	supella	dello	basani	korrobo	kukimbe
Hard	supellagari	supella	supella	pillangmo	basani	n'ukumu	kubilipilo
Herdman	supella	supella	supella	pillangmo	basani	bakenipu	epopaw
Hill	tanga	supella	supella	tin idda	basani	kujumbu	kubi
Hilt	supella	supella	supella	basani	basani	kasangapokumu	kubel
Hip	kelogo	supella	supella	basani	basani	ganango	kulung

SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Koshi.	Wa.	Gurusi.	Deboya.	Bala.
Elve	andogo	silogo	siargo	sigama	niang	manang	kolamla
Hoe	kuuri	kuuri	kuuri	kuri	varo	kuuri	katakura
Hole	boko	boko	boko	buggi	bu	kuuri	kuuri
Honesty	siun	ongveta	wigori	yelimingha	chija	kuuri	kasitungwora
Money	adu	wetobengo	seila	siri	turro	kuuri	kuuri
Hoof	gudi	adidami	wifoori	ajicheni	guila	yapallo	kuuri
Hope	mimi	adidami	ungotobe	umbolai bibbi	jinga	ferumtara	niso
Horn	yili	wakato	wakato	eli	madili	lanfo	kalambe
Hornet	kalankasi	siduma	kalankasi	salankwa	surra	gisu	wulung
Horror	wintim	wefo	umborototo	umpois auge	asinzan	masa	kabungaga
Horse	galaga	kuago	wefo	wiho	siang	hanga	hangye
Horseman	weforana	wefosaba	minzomboda	wihokina	niakuna	kanua	bampo
House	yiri	dogo	yiri	die	dio	byulie	ebu
Howl	yannogo	bachelmia	katunkum	bikokwona	inkurida	ekono	kamabang
Hunger	kon	tona	kon	klonoma	nanki	epampa	ekun
Hunter	tona	tona	ayawga	nunkwana	tambi	malang	malang
Hurry	tato	tona	umalototo	umhora wian	inrakang	mutel	ekul
Husband	yirana	insira	adidami	duirra	inbarri	ebotte	dingaber
Hut	sego	siangado	dobila	pala	silla		
Illness	barga	mbedame	abindame	balon	ala	elopo	felaw
Imprisonment	doni	di pogo	obekilamo	ba appodien	bagira	yirimu kawoo	kenokobe
Increase	palina	zupuan	pase	ba poyien	kuadang	ushio	feh
Indie-rubber	sagun	sunda	songila	sun	marro	kuuri	kuuri
Infant	bipelaga	bilila	biliflu	biye	bia	keribi	kabin

Information	intechibiri	kiberi	awungile	yeli pieli	sogo	dorte	inkanfo
Inhabitant	tingdamba	tingdamba	tingdamba	enimale	asang	y'u	insurp
Ink	daba	daba	daba	duba	osunung	duba	wulawa
Insect	niesga	niesga	niesga	nyeri	memarung	lotorr	kuungu
Interview	disokodami	disokodami	sokodame	karitunayelli	bayelli	obisipa	kamelaga
Invalid	byisa	byisa	bada	biabo	ore	mejonmo	elapaw
Invasion	didiba	disochingaba	nowtinga	tamo	kuo	obarraku	kalemure
Iron	kuti	konjuga	kuti	kuti	sto	kubiliu	kuto
Island	konjuga	konjuga	konjuga	gogiliba	velle	katiraba	kupa
Isk	zankura	zankura	zankura	enakwora	avuna	abibi	katobule
Ivory	wobunyendi	wobunyendi	wobunyendi	wa nyimni	tieli	jabbote	gaboto
Jackot	fabilla	fabilla	fabilla	kokoakro	gani	tarra	kale
Jaw	fabilla	fabilla	fabilla	yari	alape	kataya	katia
Journey	setokidaba	ditughasuri	setokidaba	suchenni	chonga	n'bung	deapa
Joy	ofunani	wasami	wasami	enona	duang	bagbonawahio	obil
Kick	tona	tona	tona	daballi	asagane	illerma	tonula
Kid	bobilla	bobilla	bobilla	pihilli	boua	kobolbie	konali
King	naha	naha	naha	ua	ping	ewila	ewa
Kingdom	nabouni	nabouni	nabouni	napalli	pingang	ewilabio	unapa
Knee	natara	natara	natara	duni	nadum	kumalle	kumba
Knife	dundi	dundi	dundi	sua	sibo	kasanga	kasanga
Knot	yedri	yedri	yedri	gulu	kukuro	n'da	kois
Knowledge	obean	yam	yam	yasoba	opae	enyega	ebornasia
Ladder	darfo	dingare	dingare	derri	gagalla	kapparr	kasapur
Lake	kwadallom	kwadallom	kwadallom	ba	mona	kuchaba	kita
Lamb	philla	philla	philla	pihilli	phito	kobolbie	katiraba
Land	tanga	tanga	tanga	tingha	ti	kodis	katiraba
Language	gwanna	gwanna	gwanna	yelielliba	ti	kasalaga	kasalaga
Laugh	lodo	oladani	lodo	laba	amunqa	ceuche	wiki

SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurmai.	Daboya.	Bole.
Lastness	kwemla	omankwen	kwem	aintidina	bavamang	etie	etal
Leaf	vado	vado	vado	yidiba	viro	afuta	fantan
Leak	tesiba	sema	notane	yidiba	kuliri	kofutis	ebidal
Leg	mauri	mauri	noti	kwerr	ching	kya	ka
Letter	karasi	karasi	noti, batata	kadasi	tana	tatera	takada
Liar	zirimbauda	zirimela	zirimbenge	siri	kochuang	kusunteng	efepaw
Liberty	zangiraguteo	puiga	umbashame	piangho	watungu	kumata	oorbi
Life	ziri	babaso	ziri	airumala	inkuang	fai kusunteng	foafe
Life	siga	siri	myori	auforri	induang	ferdina	epo
Light	velimbenni	maruyugri	fasaga	nimilori	tiapara	kerfallo	foker
Lightning	tasobo	arigo	satasa	sendra	dua	kenyiper	isaso
Lip	legumali	atasa	segunda	begruai	kallin	bulla	efuli
Liver	legumali	joqumde	nogongo	nog'evai	si	kanapubie	kanapubi
Lizard	mauri	sogri	kumpaka	fulumfi	impuo	karpancholo	kokrimbi
Load	komakka	komakka	zibbu	hangha	kalo	kitie	buri
Locust	tsidu	tsidu	zibbu	turi	villa	esola	esola
Log	aya	aya	zibbu	zozin	cherri	lu	letur
Loss	dajisi	dajisi	dajisi	dek'furi	dua	karibong	kadibibing
Loss	minongo	damila	minimami	boruba	awaga	giribi	dawoma
Lump	guga	kwesintigum	wahongo	bolambo	aw'k'awio	kokomle	kiri
Lungs	suuri	fuladi	fuladi	adiba	inchicira	egburufais	efute
Least	mborda	didwaleyugi	obganukos	rola	agima	n arulle	kusha
Mad	pulalaba	pokanda	pokomliha	sonalji	ocumba	ektan	habita
Madness	gweaga	guga	guga	sušina	ducheron	ebompa	ebumpo
Magie	guga	bagu	bagu	batterri	eburman	eferpong	karaga

Maize	kovana	kavana	kamama	kemama	panina	arboybie	aboyo
Male	dor	doa	bilbila	dori	becomang	bitchelema	enjin
Male	nachimilla	do	dowa	dorkwen	bal	karbarante	esa
Man	ninkema	do	nega	wilho g	aisong	kior	koba
Mans	jeto	gioto	getto	pormiebo	obian	obidongerr	fin
Manner	yan	omariam	yamaga	berbong enchei	opari	n'karga	muwofo
Manlaughter	atragunwo	atragunkwaia	atragunkwaia	berbong enchei	opari	n'karga	muwofo
Manure	napiranga	zamarhiningpoue	atragunkwaia	berbong enchei	opari	n'karga	muwofo
Manuscript	manima	manimabobe	fula	berbong enchei	opari	n'karga	muwofo
March	hanganu	chidi	fula	berbong enchei	opari	n'karga	muwofo
Mare	wudidiga	weluga	fula	berbong enchei	opari	n'karga	muwofo
Mark	bande	ningmabande	fula	berbong enchei	opari	n'karga	muwofo
Market	da	da	fula	berbong enchei	opari	n'karga	muwofo
Marriage	fululei	fululei	fula	berbong enchei	opari	n'karga	muwofo
Marh	kwoljetim	wana	fula	berbong enchei	opari	n'karga	muwofo
Master	yirana	nba	fula	berbong enchei	opari	n'karga	muwofo
Mat	makusabba	pingi-songo	fula	berbong enchei	opari	n'karga	muwofo
Mate	gabanga	mbima	fula	berbong enchei	opari	n'karga	muwofo
Meal	manantima	dibo	fula	berbong enchei	opari	n'karga	muwofo
Measure	dibo	makoma	fula	berbong enchei	opari	n'karga	muwofo
Meat	makoma	nindo	fula	berbong enchei	opari	n'karga	muwofo
Mediator	nindo	manimanda	fula	berbong enchei	opari	n'karga	muwofo
Medicine	segurigwihara	manimale	fula	berbong enchei	opari	n'karga	muwofo
Meeting	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Merchant	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Merry	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Merit	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Messager	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Metal	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Mildew	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo
Milk	tiem	tiem	fula	berbong enchei	opari	n'karga	muwofo

SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Guramal.	Daboya.	Bole.
Kind	ting'ori	yan	tinge	tiella	isua	kingi	kaungo
Minstrel	kwodana	dadaga	dadaga	kongwira	koindura	dororo	epil
Mirror	ninkwaga	ningwendi	ningetiga	bumbaye	awunuma	kin'ichi	kutchochebi
Misconduct	nimwindi	ningwendi	atunwiga	nimbie	inbasang	m'pakumale	enbopo
Misery	oceanimbanga	ningwendi	isuridina	joonon	polla	kerjeer	awunfu
Misfortune	zugubinom	zebenera	isuridina	joonon	polla	kingo	ineraselibi
Miss	dingyusommi	dingusame	inkapamia	clabaring	oumped	into-munya	keghe
Mist	dinggamaia	meam	ayingri	nandi	n'yarro	efucha	kapabidi
Mistake	pawono	wulugu	isturgame	iyinia	inya	m'fol	mtauso
Mistreat	pabala	palal	mankutunye	bora	becho	n'kini	mayayada
Moan	bhasitali	worogole	meeminkunde	balong	owavey	okiligi	kefue
Mob	tig'ungo	zanna	zanastigum	zori	imkaraga	bersarr	basadamata
Money	wanzirila	ligidi	wanzirifu	lebe	malbe	mesiribi	anashiribi
Monkey	wamba	wamba	wamba	muanga	wanie	lakasa	unbwi
Month	tinga	kinga	tinga	kowan	kempula	kannu	kechampekofar
Moon	ibingo	ibingo	ibingo	bebin	chuchua	koful	koful
Morning	dunai	dunai	dunai	doni	chuchua	kiperso	asima
Mosquito	fado	filimpigodo	fogo	dmdali	bela	efo	epui
Moth	na	na	na	ima	na	binghini	inkrowa
Mother	damwonogo	na	na	makyani	duodonaga	nier	inyeo
Motive	tampuri	pimpipiri	tambile	bimbini	yila	mesanawo	mesanawo
Mound	tanga	tanga	tanga	tanga	pula	bete	baso
Mountain	nori	nore	nori	manari	tero	temperi	emaso
Mud	bagode	bagode	bigod	manari	tero	ni	kano
						filigi	anwale

Murder	shagada	shagada	shagada	shagada	shagada	shagada	shagada
Murderer	shagada	shagada	shagada	shagada	shagada	shagada	shagada
Mutiny	shagada	shagada	shagada	shagada	shagada	shagada	shagada
Nail (finger)	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Name	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nation	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Native	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Navel	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Neck	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Necklace	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Need	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Needs	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Neighbour	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nest	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nets	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
News	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nickname	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Night	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nod	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Noise	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Noon	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
North	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Nose	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Not	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Notion	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri
Number	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri	nyag'ri

SUBSTANTIVE

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SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Search	isima	ungwasadame	tugungéi	boarn	kwuga	.	keti
Seat	bonna	gwelo	gwelo	kogi	dagno	.	egwa
Seed	gali	ibisi	bisi	bunbia	kwunakh	.	keyipéti
Seizure	kragomo	Swawotudweima	nagaga	inyoubu	avesaguh	.	katamo
Servant	biga	biga	biga	bibili	amuzoa	.	kebibi
Shape	damwonogo	diwonogo	zémawato	i-yung	vegongulan	.	etoko
Sheep	pio	pio	pio	piri	pio	.	kebolapan
Shepherd	pikima	pigunda	pikima	nachina	gagino	.	ebikiti-kebolapan
Shot	knukun	dakwaia	aweya	mafkuri	madagina	.	ebikiti-mo
Shout	kas'ga	bolmakwengo	shahuga	bollo	dan	.	mentiri-akro
Shower	minugo	aminhida	minugo	ballo	yawendo	.	bone
Sickness	barsa	banga	legina	bollo	gwewa	.	kulaw
Signal	lersóna	lakasama	sinia	ibila	puni	.	jongo
Silence	banum	balam	sinia	ibila	gifle	.	lato
Silver	wanzirifu	wanzirifu	wanzirifu	kudi	uniyo	.	ederibi
Sin	wanga	wanga	dingaga	iriba	odenowa	.	elibi
Singer	Mayinda	Mayinda	yanginda	yelu	nifaro	.	kisewura
Size	disemama	disemama	zémungo	manu	iyara	.	keshile
Skin	gawo	gawo	gungo	bani	atiga	.	kwil
Slave	dabi	dabi	yamba	yini	kaba	.	kinya
Sleep	grem	usustini	gunde	gwoog	atiga	.	dashe
Sleeve	gwama	kworopole	fabila	poru	ganuggi	.	ano
Small	suga	nugu nogo	nugu	yung	kneh	.	kedufe
Smile	nogumingo	nugungo	fonogoo	lari	kupash	.	mushe
Smoke	sumai	nudatata	tabroko	nuari	izi	.	menu
Snake	wafu	wachingfo	wafu	wabu	deuingi	.	kwaw

Soldier	barodana	marfadana	kambeind	naba	law	elomwonepihi
Song	yila	yologo	yeli	yale	bagah	kishe
Sore	zanda	nodere	nodele	fale	hugwine	akiba
Sorrow	diabmahalla	desaboma	sabina	okrainen	tambah	kabehia
Sound	dichalaga	dimalakui	kang	miaba	chugaw	meno
Soup	sendo	sendo	zingado	siari	dang-ah	eggo
South	tengii	dingre	tingii	nugor	yisicho	intoshi
Speech	kwama	kwama	kandi	pwani	kang	kemi
Spite	jariba	kande	gom	yeli	sawan	kuanyle
Spiral	rukonto	manugwasada	getabum	suri	avéno	ungpanata
Spur	sali	wenogoma	agwidame	balong	wapine	burano
Star	Adisi	alhabri	adei	agidda	neshunchi	lular
Starvation	kum	warase	kong	molbia	neung	akwakom
Stop	natagari	kom	longli	dari	bagali	baaya
Stick	dasari	maiarundi	dasari	dangbali	daw	indibi
Sting	dumba	dumbi	wagri	domu	pasina	ewodom
Stink	stungu	tipua	kegye	nang	kufen-sena	kabedufu
Stone	kaga	kunglinga	kunglinga	hoori	agumbo	agumbo
Stool	saba	gelo	kutiga	kogi	dagano	kebe
Stranger	saba	samba	sama	sana	vero	efo
Success	spania	spania	impaboringa	daba	kwaza	malala
Sugar	yamunaseo	sidu	yansida	ayaro	konoy, turaw	konoy, masha
Summer	sungu	warwendi	awido	ori	set season, yidung	dry season, kapawule
Sun	wusaga	untanga	wuntogo	myia	iyé	piage
Surrender	ntumi	untumi	intalame	enwyon	bodira	cashile
Suspicion	njesidayinsi	ntendosee	intalame	gagara	ayiruwuko	menta
Sweat	tologo	tologo	intalame	pori	tulunga	kobila
Swelling	morogo	morogo	modame	pori	m'wia	kapunge
Sword	saga	saga	saga	sua	diaw	kasanga
Tail	suri	suri	ruli	sori	debili	kufule
Tailor	santa	seta	sanaga	sara	gou	ekimé
Tale	soloma	sonaga	yanaga	yeryaga	yai	memaramekuto
Teak	tuna	tona	tundi	maba	tatunga	maso-ede
Taste	lena	lena	lenoga	nua	kumokutaw	wonukete

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SUBSTANTIVES.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Waite	osandabuni	sanboe	sanda	oson	asiko	kerjejer	gaga
Water	kon	kin	kom	kwa	nia	a'qu	intu
Way	suri	sungin	sungin	sini	tuburaw	musumbi	longa
Weakness	oyinakwa	elikomani	ari	sobele	chugaw	tepa	ekwa
Wealth	omarrabuni	fasaga	asaga	balong	ayiri-gwari	ayulungyung	knayala
Weapon	abarrabuni	marboni	tiedu	bundana	opwe	mor	inyaso
Weather	dotiedu	mbekun	dotiedu	zoribooma	lowen	kanyisa	anoko
Weight	wado	wakato	dinya	woni	tiaparra	karaga	kudakwapa
Well	mugaga	guna	yani	boutiro	kudoh	katumba	koraghi
West	bulaga	bulaga	bulaga	bulu	m'wona	katumba	katumba
Whip	ditogo	bulaga	ditogo	nimitori	tiyacho	katumba	katumba
Whiskiness	bulaga	sogo	sungogo	kasu	yidung	kechale	katumba
Wife	yeluwanga	kasu	dibega	kasu	tampire	kuchucha	katumba
Wind	paga	ningwendi	mautaga	yiribibi	gachakaw	mulung	katumba
Wing	abibago	abibago	sobogo	porgi	kating	ebie	ego
Wisdom	peggerri	paga	tehere	soia	roo	erfu	afu
Witness	unvurammi	kasu	yamobbo	begidi	reng	katubi	katubi
Wolf	kasu	kasu	kasu	yamamba	en	enguyipa	finyasi
Woman	katerra	katerra	katerra	enyor	unkalyu	torno	edewondo
Wonder	paga	paga	paga	bongtori	nachawuru	kuntung	kuntung
Wood	dehimbeni	oligname	laziba	porbili	akani	ebie	intoto
Work	lariballa	dado	dado	yemwoni	ewonkazing	n'tuba	mesakwoko
Worm	dawogo	dado	dado	dari	daburu	katipa	indibi
Wrinkle	gwanma	yole	yole	yelliyelligu	sogo	katipa	katipa
	tuna	toma	toma	tuna	tutung-ah	kusum	kusung
	ayini	larenga	tologo	albolma	kaala-tana	tehongchong	atindibi
	nengwekma	ningegui	augwene	doisyaga	pwani	erburaga	ebibri-inishe

Wrist	malwa	malwa	malwa	malwa	malwa	malwa	malwa
Water	galila	galila	galila	galila	galila	galila	galila
Wax (cotton)	ayali	ayali	ayali	ayali	ayali	ayali	ayali
Wax	hako	hako	hako	hako	hako	hako	hako
Wax	panago	panago	panago	panago	panago	panago	panago
Wear	yali	yali	yali	yali	yali	yali	yali

ADJECTIVES AND ADVERBS.

Culm	belian	belam	banum	neasong	obasing	laio
Capable	mitulaga	utolohale	abapaga	kantour	oyeh	metung
Careful	gusama	kwasamuru	jestire	karosung	oyesogo	ketinanye
Cautious	biyohalla	omakrem	apajetia	akarosung	oyotobena	eminye-sang
Certain	oodiyainpam	bordiyendi	apjatimaga	manu	epatupo	mananla-wora
Changeable	gabigameri	bingwuse	iborja	yerimunga	isaa	inyarada
Chaste	makore	makore	anapogoda	tuqibu	olango	mo
Cheep	nam	namtumba	anapogoda	keritua	asuna	amashirihuba
Cherful	yuri	nam	wungo	obaga	oyatwala	kaben-wishi
Chieftain	iswongimanni	obwondia	wungo	yumbilai	lagobunguahi	longa
Clean	yilgimide	omulagoyinzi	pidame	oyela	kerfuru	longa
Clear	kwasungo	kosongro	komungro	mali	kowale	londo
Clever	mariam	omarimahale	yemaga	ibhon	ogochi	abosom-mila
Close	yanyam	wado	yam-yam	yanyan	tarto	ti
Cold	wordo	wado	wado	ori	awo	akudia
Common	dizoya	dimataga	bevuaxzi	nan	koshi	koshi
Conflicting	warumpondi	omadaiyalye	kazexzi	meleba	keruhaga	bumalaga
Convenient	panpanga	toto	wakatto	song	menting	meypoo
Correct	gungwa	masaga	yare	tolong	kerbil	embonto
Crafty	bhesoba	ibwadeningpam	asongpiye	ataira	erlugo	menyinitimo
Crooked	digwelinya	ibharuti	golanname	maung	kaugtasa	menyinitimo
Crooked	digwelinya	digwelinya	golanname	maung	brinu	pankipire
Cruel	bumwinya	nanga	asagifema	busongga	gigigu	ebana
Dangerous	dimaldehin	dabem	bichabis	piaga	oyuchugaw	kumodapapa
Dark	lika	lika	wong	maha	wakaba	halhi
Dear	obuwundi	obonde	wong	yung	aseng	kariso
Dear (price)	diligritama	ala	daberia	ibi yaga	osabaw	emabao
Deep	bulaga	draulma	limbo	keruyuh	toada	yulidapapa
Defiant	nakwendi	manukwenhale	nikwendo	irilo	keriwiheng	lafu
Deliberate	sanchiso	butoerna	tisi	buo	esepgo	masangamo
Difficult	ditwasa	kremwaga	kwaa	intieroa	n'fal	worubiang
Diligent	ayribeni	laweringyendi	kiema	tiempurna	kudupapa	kudupapa
Diligent	diweggam	ditika	nitu	vis	asahelubi	emisiyor
Distant	moko	moko	sowoko	satori	kofois	ketindo
Dumb	moko	moko	zarame	mung	opoiui	eminye kamalaga

ADJECTIVES AND ADVERBS.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Big	inimbira	mbordamalanga	agtoasaga	imbora	agidani	metama	woranye
Easy	deatre	balum	masaga	boyi	lobana	boyi	bwai
Edible	dibo	masaga	dibo	bundiri	kwitf	agibi	agibi
Empty	bonvita	bonotaimi	bumiego	bunchibi	yikali	folung	kwusokomento
Even	bumpalaga	bilfa	mbari	siargata	kuale	eda	karaso
Evident	hasto	biala	kashitu	koyansa	kwon	kijili	inwo
Extravagant	dilasama	oanbulhale	adibam	busana	kikuna	ajeje	akwaso
Faithful	yelimengeri	malasala	abittam	yeliminga	napari	odlong	kasite
Faithless	jiridana	ninrugare	anibela	yelimingachibi	wonotf	mayeda	idapo
False	monatch	kuugo	afimbashaba	ari	.	afar	mayayada
Famous	medafamin	tinba	fafa	yadiba	.	kerire	kemindangfo
Far	divagam	divagam	sala	entori	.	kofo	kowakato
Fast	venrem	divara	kato	wyong	.	malan	milamila
Fat	ban	tan	kam	kambairo	.	fadai	ketonku
Fatal	psologo	grinia	pogologo	balakura	.	arummu	abemwomo
Favourable	nimbazala	pietre	akonta	kokooson	.	kalinar	loworumebe
Fearless	obuzetadi	obizetibum	akalabende	pangadanga	.	kargbonisier	emangana
Few	bila	biala	bilifa	beria	.	bere	beribi
Fierce	bujiya	debiem	abertibam	dabier	.	kufu	kufu
Filthy	diagone	diagone	semasame	dori	.	eyurupi	eyurupi
Firm	balum	balum	semasame	araba	.	keryilene	kamaburi
Flat	pakloga	pakloga	yalina	oestigia	.	m jarr	kaba
Foolish	jirigo	dansalagirogo	togoli	damboli	.	jarra	ewulopo
Forceful	palamashi	yalamazada	abasa	feriba	.	ilenga	masakwura
Free	kwangungu	manmakwango	abasa	im bilain	.	hoire	masong

Frequent	dartam	darma	ladumo	iwana	ampinabarr	kiechachawa
Fresh	modo	inyesi	mindu	sinapala	bambum	kabonbung
Full	dipdinga	dibeni	pidinga	opalin	bolla	kabawla
Gandy	morgdi	dilebogoda	pidinga	lentelento	dodoni	waga
Glad	ogunogo	dinom	sona	impainan	kargbuntufuli	ebet
Good	divela	divela	sona	overlong	koale	kinyala
Grateful	okonta	yelneagre	sona	inman	ebolmudung	ackemo
Great	diya	bunglasanga	waga	sinagpa	eluma	kebungbung
Green	bunbasaga	chega	singa	bonpepa	sergi	katrubi
Gully	edibikam	ayekane	forinkaiye	yelisanana	boasi	kumongabil
Happy	wunlango	nivrame	awunogo	impainan	kargbuntufuli	eyuriwahi
Hard	wigogo	kankan	kema	impainan	eling	kadupapa
Harmless	dabankani	obamarsale	kamambusye	bonsum	alangder	kidung
Healthy	fuso	minna	cheganga	yiripierai	nyeniyanga	abung
Heavy	kwobrichem	obikahia	akobrikema	sinpierna	eyuruvahie	kadere
Keapless	ziema	zingo	zia	bonstero	kogber	karugbe
High	obumangda	ibonaleri	anfeheye	ninkumo	obiergho	kokaw
Hollow	bungwoko	diwarani	waguna	sau	etientien	katenen
Hot	boko	boko	bolto	busala	chang	kamen
Hotly	yilugunde	misiri	arodana	nuavaria	boroba	kadat
Hotful	tingonda	intinda	intingida	tero	minama	kadahi
How	togolam	toodo	toodo	tolong	epamfel	kadi
How	bramali	yawuna	yawuna	bang	adama	nurusa
Humble	onashali	umbanderaba	awigida	amhalo	keribi	ingwene
Idle	kwemah	onakwen	kwem	intidana	epasopo	masong
Ill	bani	bense	bayikum	belong	obierior	kulaw
Immediate	tato	malatoto	madama	paupon	kokongolo	haralotide
Important	dichenahli	yelogo	yilichaga	puan	keralla	ketiri
Incautions	busmade	banarkwemo	apagotabumye	ihlason	tanto	piage

ADJECTIVES AND ADVERBS.

English.	Dagomba.	Mamprusi.	Moshi.	Wa.	Garunsi.	Daboya.	Bole.
Only	nyilwakwa	yimela	niendeiye	niyes	.	elikogole	kokondwoli
Out	dinguori	dingora	ninga	ira	.	bor	kaler
Over	port	digore	apoli	yenci	.	kocoma	kawero
Own	nbumila	mboconla	mandina	ban	.	tandansa	kechaw
					.	mowa	muwa
Painful	diabana	diabunahale	afidam	obiana	.	keribiana	kabina
Peaceful	diabunanga	dingana	laguame	na	.	kobopo	longa
Perfect	diabunani	diabunani	bonkoro	na	.	kobongo	kabobla
Permanent	bunkoro	diabunani	bonkoro	koro	.	cha	kawagato
	wempuaba	mwamba		manu	.	kasorra	enibore
	alialamba	akalamba	karandai		.	kumokwarr	menakule
Filless	obietimbanaga	okaimbaga	akanimbaye	jaga	.	efoli	efoli
Plain	venmi	pingo	viame	bomboli	.	boko	asiga
Flamfal	warhali	deveya	wuago	yaga	.	ebolopo	kinyiti
Poor	nimbardama	nongana	nongaba	nankoma	.	asura	ekuma
Popular	disamba	disangungu	songo	baoru	.	alebu	kumindupa
Possible	okontogre	unkunare	konania	basig	.	etiempa	kabide
Powerful	kwegodana	tilose	tongaba	pona	.	etiempa	etiempa
Present	abangabeni	wakutanga	masa	artian	.	kowalaga	etiempa
Pretty	diela	diela	beniri	owela	.	keranteng	keranteng
Probable	ibjisi	obugwase	kajese	wonata	.	tona	tona
Proditable	nodo	nodo	nodo	dogui	.	etehakoropo	etehakoropo
Prolific	dogumbeni	obusawya	pogaraigala	dogui	.	ng'angafa	ng'angafa
Prompt	malmatoto	opogodagoda	tato	talo	.	magtala	magtala
Prosperous	amba	omartunhale	nandibe	toni	.	kijyale	kijyale
Pure	a soga	basongo	santa	obagari	.	malang	malang
Quick	pampanog	malmatoto	marasa	wierwong	.	booi	booi
Quiet	sinama	isinoma	sinda	van	.		

Bagged	chinchankorosi	fukuria	fakurie	ochian	aticharr	kechanga
Barren	imbamaltipogo	onaleyuri	zulum-zulum	pelinto	fakinar	emungwo
Bar	wanala	port	ad-bodome	maiyo	amunpa	kamaya
Beady	bunkado	kado	kado	bukari	kobumbung	kupapur
Becky	siagologo	siagolore	siagluggi	yasia	miballa	longa niyo
Recent	dingdi	ninane	ninane	bak'ori	kermaincharr	sengede abamba
Red	bungu	ziaga	minu	benzia	kerperre	keppir
Reddible	imbao'tali	malasingkema	basatili	diadi	kobolla	shillina
Remarkable	baui	ningana	bandi	imboua	ekumane	adinea
Repeated	lebitokoma	lebitokoma	lebitokoma	olawai	fiertoma	sahi
Reputative	zagago	imarsupihale	wensa	daba	fulinga	minba
Responsible	nakwema	ingogwalurubah	ningette	manara	kerdebi	tambasina
Rich	obobunni	omaraban	abebun	bandana	asowura	osowura
Right	ditogo	ditogo	yari	band dulan	jia	gabha
Rightful	yelimingsoba	wasungwa	serisoba	malison	bongwura	woromana
Roaky	piaga	taaga	taaga	asangi	ajamba	kofalibi
Rotten	ponogo	disanio	ponga	kubo	keber	sokowon
Rough	bunkwodo	dipoya	fongame	dapuoni	kongara	kongara
Round	digligammi	ninayore	yaleale	nimbini	kakala	kakali
Royal	nabai	digubaya	gumbagame	vidu	mukoropo	kwara
		nabiga	nairibga	mabie		
			nabagga			
Sacred	intingrammi	kobalafa	intingame	idomngai	borobu	karmo
Satisfactory	isatani	isatani	asitane	suma	kobolla	iwali
Savage	kaifidamba	kaifidamba	chifidamba	bobon	nyuyanga	ibundu
Scanty	yaligadi	chibengba	benrosogo	ne-dama	amufor	bera
Secure	solaguna	solaguna	arishodame	sando	alawatika	tangana
Selfish	ibogoguma	ibogoguma	indagatime	impayya	fucom	fucom
Sensible	oboroni	oboroni	arogaye	nimbila	kajer	sinpene
Serious	omarsuguri	omarsuguri	arogaye	jesosoba	agayaka	agayaka
	debiem	kwagola	dabembe	inpinna	agomoma	minimilina

ADJECTIVES AND ADVERBS.

English.	Dagomba.	Mamprusi.	Koshi.	Wa.	Gurusi.	Daboya.	Bola.
Several	dimarwosoogo	dimaraga	amanwago	tantuma	.	bere	mito
Shady	diwaga	djweyabale	masum	maru	.	kyul	kainle
Shallow	masom	malaga	togoli	bogua	.	tala	koofui
Sharp	togori	malaga	tato	moiba	.	.	idumullamala
Shocking	pampunaga	malaga	adigimane	ini	.	barafor	bikini
Short	edigindammi	adigimane	adigimane	bungua	.	taripa	adoushimba
Shriveled	benwaga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sick	nyilaga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Silent	basiburi	adigimane	adigimane	adigimane	.	taripa	adoushimba
Silly	dunga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Similar	dizentaba	adigimane	adigimane	adigimane	.	taripa	adoushimba
Skilful	yandana	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sleepless	obugwe	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sleepy	guga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Slight	fasaga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Slimy	salugammi	adigimane	adigimane	adigimane	.	taripa	adoushimba
Slippery	salaga	adigimane	adigimane	adigimane	.	taripa	adoushimba
Slow	sonarritam	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sly	obitiam	adigimane	adigimane	adigimane	.	taripa	adoushimba
Small	bilfu	adigimane	adigimane	adigimane	.	taripa	adoushimba
Soft	lomlomom	adigimane	adigimane	adigimane	.	taripa	adoushimba
Solitary	tiyanibobi	adigimane	adigimane	adigimane	.	taripa	adoushimba
Some	tori	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sometimes	nakua	adigimane	adigimane	adigimane	.	taripa	adoushimba
Sometimes	diwakatunga	adigimane	adigimane	adigimane	.	taripa	adoushimba

Boon	marumara	dimarabale	mahamasa	paupinga	marope	malamalla
Sore	pampunaga	adigimane	adigimane	adigimane	adigimane	kabibasa
Sorry	diwaga	adigimane	adigimane	adigimane	adigimane	etono
Sound	diwaga	adigimane	adigimane	adigimane	adigimane	basima
Sour	oebanballi	adigimane	adigimane	adigimane	adigimane	unful
Square	gubugiri	adigimane	adigimane	adigimane	adigimane	adigimane
State	bukoroko	adigimane	adigimane	adigimane	adigimane	adigimane
Steady	yasumizemai	adigimane	adigimane	adigimane	adigimane	adigimane
Steep	bokko	adigimane	adigimane	adigimane	adigimane	adigimane
Sticky	tsanga	adigimane	adigimane	adigimane	adigimane	adigimane
Stiff	okwomborichama	adigimane	adigimane	adigimane	adigimane	adigimane
Straight	tiriga	adigimane	adigimane	adigimane	adigimane	adigimane
Strange	dimarabim	adigimane	adigimane	adigimane	adigimane	adigimane
Strict	lacibiyella	adigimane	adigimane	adigimane	adigimane	adigimane
Stupid	ardana	adigimane	adigimane	adigimane	adigimane	adigimane
Successful	kwengo	adigimane	adigimane	adigimane	adigimane	adigimane
Sudden	impagongya	adigimane	adigimane	adigimane	adigimane	adigimane
Sufficient	ningo	adigimane	adigimane	adigimane	adigimane	adigimane
Suitable	tiarra	adigimane	adigimane	adigimane	adigimane	adigimane
Sultry	tiarra	adigimane	adigimane	adigimane	adigimane	adigimane
Sure	nigbedammi	adigimane	adigimane	adigimane	adigimane	adigimane
Suspicious	intiguduwai	adigimane	adigimane	adigimane	adigimane	adigimane
Sweet	dimuhalli	adigimane	adigimane	adigimane	adigimane	adigimane
Swollen	moroto	adigimane	adigimane	adigimane	adigimane	adigimane
Tall	nimwoko	adigimane	adigimane	adigimane	adigimane	adigimane
Tame	baguogo	adigimane	adigimane	adigimane	adigimane	adigimane
Thick	beni	adigimane	adigimane	adigimane	adigimane	adigimane
Thirsty	banisogo	adigimane	adigimane	adigimane	adigimane	adigimane
Thrid	kweudu	adigimane	adigimane	adigimane	adigimane	adigimane
To-day	ninindi	adigimane	adigimane	adigimane	adigimane	adigimane
To-morrow	duna	adigimane	adigimane	adigimane	adigimane	adigimane

ADJECTIVES AND ADVERBS.

English.	Dagomba.	Mamprusi.	Koshi.	Wa.	Gurusi.	Daboya.	Bole.
Too	maiga	mariga	ayenda	yagi	.	ng'wu	hufina
Torn	tesgi	dichengra	toore	oson	.	kofuti	kapa
Tough	nemkwani	dikembale	wigologo	tunawu	.	tantana	k-kimahi
Troublesome	nimbela	nimbela	beligole	dumu	.	fiertora	kala
Truthful	sielana	omahidale	selisaba	yeringadana	.	fiarobol	kasata
Tyrannical	nindigoda	warembo	abipanga	nabio	.	kuyana	kalila
Usable	himma	unkomale	inkatinge	kwantua	.	menting	kalini
Unanimous	kuntumani	dizangwina	obfigumame	lamu	.	merlogo	siyo
Unaware	desongvanyendi	nadwipore	akamiye	maniri	.	antio	akite
Unceasing	obanga	manale	inpankamde	zaba	.	kachala	kicso
Uncommon	mb'wari	mengre	kanyati	damsiya	.	kokwashinda	esawun
Undeserved	unkonyo	dibitoraga	sinulame	abashili	.	abaki	iparadibi
Uneven	dibwaga	dabete	tiama	inkana	.	amama	iparadibi
Unexcusable	dibwama	obimamgre	kasaria	obamoris	.	amama	iparadibi
Unfaithful	dibwama	dibimale	kasaria	obesima	.	amama	iparadibi
Unfortunate	b'wari	obimale	akogomida	yilama	.	fermedong	korokirru
Ungrateful	obukongre	tungane	akazema	natoro	.	kachamwata	imining
Unhappy	onenghisi	obimale	akazema	obapuri	.	kermampote	imining
Universal	unkondewli	obimale	akazema	obapuri	.	makala	simatimbyug
Unknown	bini	beni	inikamiye	basayaa	.	lowarr	siyanda
Unlike	enimbiam	bibangi	inikamiye	inabon	.	lapji	juna
Unlucky	esugbinom	bibora	pasantiye	obakilla	.	kemengji	sin'fa
Unperceived	obumwanari	obimale	akazamiye	inawonta	.	masakuna	sasa
Unpleasant	isumbunam	bongwamediri	inkatenge	inawonta	.	manugakuna	moor
Unprepared	imisterleggi	dibonon	inkatenge	osumani	.	kamwale	kambola
		solokani	inkatenge	manali	.	funashira	minchri

Unruly	dikaro	obimale	obimale	obimale	obimale	obimale	obimale
Unsuccessful	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Untrustable	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Untrue	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Unwilling	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Useful	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Useless	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Usual	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Vacant	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Vain	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Valuable	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Venomous	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Verbal	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Very	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Victorious	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Violent	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Virtuous	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Voluntary	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Warlike	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Watchful	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Wear	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Welcome	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
West	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
Where	unkonam	obimale	obimale	obimale	obimale	obimale	obimale
White	unkonam	obimale	obimale	obimale	obimale	obimale	obimale

ADJECTIVES AND ADVERBS

English.	Tagalogs.	Managat.	Kahl.	Wh.	Gerust.	Dobaya.	Zebu.
Whole	lumpo	an	fan	an	.	anun	hallo
Widened	blings	mirin	blings	blings	.	halal	halah
Wide	diann	diann	yann	hayan	.	hann	halorro
Willing	halimbek	neagan	neagan	neagan	.	neagan	halaga
Wine	pankan	pankan	pan	pan	.	pan	halaga
Wonderful	yandun	halibis	halibis	halibis	.	halibis	halibis
Vertuous	madungad	diann	diann	diann	.	diann	halibis
Wary	diann	diann	diann	diann	.	diann	halibis
Wrong	pankuk	pankuk	halibit	pan	.	halibit	halibis
Yellor	halid	halid	halid	halid	.	halid	halibis
Yesterday	manak	halid	manak	manak	.	halid	halibis

PREPOSITIONS, ETC.

[illegible][illegible]

PREPOSITIONS, ETC.

English.	Dagomba.	Mamprusal.	Moshi.	Wa.	Gurusi.	Daboya.	Bole.
Once	aga	malendi	yari	dani	.	kokongolo	kachkoli
Twice	agari	ayibu	ayibu	bin	.	anyor	inkenyo
Three times	agari	asa	ayibu	batlan	.	anyinyor	inkema
Two at a time	ayiji	ayiji	ayibu	talata	.		yosunkanyo
Good morning	masoha	masoha	naga	asuma	.	asuma	ebutoi
Good-bye	manwendi	nawuterebiogo	wunakolebiogo	inbasi	.	kachakor	metbuta
How are you?	ibehiafi	darena	behi	diabison	.	futunuso	mina
Stop!	fasoma	isadwelala	yasi	arbita	.	yili	yili
Thank you	ebarka	mas-indana	barka	unpoisi	.	mecholofo	asa
Sunday	hato	hato	hato	aliri	.	aledi	alahadi
Monday	atoni	atoni	atoni	atani	.	atane	atani
Tuesday	talata	talata	talata	talata	.	talata	atalata
Wednesday	araba	araba	araba	araba	.	araba	akraba
Thursday	hamisa	hamisa	hamisa	ahamis	.	ahamis	ahamis
Friday	asoma	asoma	asoma	alijima	.	alijima	alijima
Saturday	asibiri	asibiri	asibiri	asibiri	.	asibiri	asibiri

APPENDIX C.
GARDEN RECORD, GAMBAGA.

Description of Plant.	Date of Sowing.	Date of gathering first Fruit.	Condition of Fruit.	Remarks.
Mustard seed cross (Setton's seed)	11.2.96	20.2.96	Good	Grown under verandah. Subsequent sowings in the open, when the rains had begun, produced excellent results, but the cross seed deteriorated with keeping and grew weakly.
Vegetable marrow (Setton's seed)	12.2.96 20.7.96	24.2.96 24.2.96	Very fine	Grown under grass shelter. The promise of this series was very great, but many of the marrows were attacked by an insect when very small, and became nurseries for families of grubs.
Cucumber (Setton's seed)	12.2.96 27.2.96 28.2.96	24.2.96 24.2.96 24.2.96	Excellent	Grown under grass shelter.
Tomatoes (Aburi seed)	28.2.96 10.3.96 24.3.96	24.2.96 24.2.96 24.2.96	Excellent	Grown under grass shelter.
" (Setton's seed)	10.3.96 24.3.96 16.3.96	24.2.96 24.2.96 24.2.96	Excellent	Grown under grass shelter.
Radish (Setton's seed)	16.3.96 16.3.96 16.3.96	24.2.96 24.2.96 24.2.96	Excellent	Grown under grass shelter.
Lettuce (cabbage; Setton's seed)	14.3.96 21.3.96 14.3.96	24.2.96 24.2.96 24.2.96	Excellent	Grown under grass shelter.
" (one; Setton's seed)	14.3.96 24.3.96	24.2.96 24.2.96	Excellent	Grown under grass shelter.

Description of Plant.	Date of Sowing.	Date of gathering first Fruit.	Condition of Fruit.	Remarks.
Onions (Botton's seed) — —	14.2.96 22.2.96 16.6.96 26.7.96	5.96 9.96	Very small Good	Started well, but soon ceased growing. No result. No result.
Broccoli (Botton's seed) — —	14.2.96 24.2.96 24.3.96 26.7.96	— — — —	— — — —	Came up fairly well, but died down after standing still for months.
Broad beans — —	14.2.96 24.2.96	— —	Flowered 4.5.96, but did not fruit.	Did not fruit.
Turnips (Botton's seed) — —	14.2.96 19.4.96 23.2.96	— — —	Flowered, but did not fruit.	Died down.
Spinach (Botton's seed) — —	1.6.96 23.5.96	12.7.96 22.8.96	Fair: rather stringy. Very good	About 70 per cent. of the seed failed.
" (<i>Brassica oleracea</i> ; Abneri seed)	7.4.96 12.4.96 24.5.96	30.7.96	A fair crop, but it was very good indeed.	Almost entirely eaten by insects.
Orange (Abneri seed) — —	7.4.96 12.4.96 24.5.96	— — —	— — —	No result.
Lemon (Abneri seed) — —	7.4.96 10.4.96	— —	13 plants survived:	are doing well.
Citrus (Abneri seed) — —	24.5.95 16.6.96	— —	— —	No result.
Lime (Abneri seed) — —	24.5.96 16.6.96	— —	— —	No result.
Coffee (Abneri seed) — —	11.4.96 26.7.96	— —	— —	No result.

Description of Plant.	Date of Sowing.	Date of gathering first Fruit.	Condition of Fruit.	Remarks.
Cotton (Aburi seed)	16.5.96	—	—	No result.
Cocoa (Aburi seed)	24.5.96	—	—	No result.
Samop (<i>Samop muricata</i> ; Aburi seed)	27.7.96	—	—	No result.
Fruit plant (<i>Vangueria edulis</i> ; Aburi seed)	20.9.96	—	—	No result.
Gauva (<i>Psidium guajava</i> ; Aburi seed)	19.9.96	—	—	No result.
Cotton oil (Aburi seed)	16.9.96	—	—	No result.
Cabbage (Sutton's seed)	19.9.96	—	—	No result.
Onion, Canadian	22.7.96	—	—	Above ground, 27.7.96.
" English white	25.7.96	—	—	Above ground, 1.8.96.
" New Zealand	26.7.96	—	—	Above ground, 2.8.96.
" black	27.7.96	—	—	Above ground, 2.8.96.
" yellow	28.7.96	—	—	Above ground, 28.7.96.
Wheat, Karachi	22.7.96	—	—	Above ground, 28.7.96.
Rubber (<i>Manihot Glaziovii</i> ; Aburi seed)	2.8.96	—	—	Average period of germination, 11 days. About 10 per cent. of plants grew well without protection.
Pean (<i>Arachis</i> seed)	4.12.96	—	—	Plants grew well without protection.
Pean (Hosper's seed)	6.1.97	—	—	Small pods, & very few.
	20.10.96	14.1.97	—	

Scarlet runners, peas, melons, nutcrustians, sweet peas, and clematis were sown in January, 1900, but were in an immature condition when the compiler of this record left the country.

APPENDIX D.

RETURN SHOWING WEATHER OBSERVATIONS TAKEN AT GAMAGA DURING THE YEAR 1893.

Months.	Thermometer (Mean Tem- perature).		Barometer.		Wind.		Rain.			Atmosphere.		Remarks.
	9 a.m.	5 p.m.	9 a.m.	5 p.m.	General Direction of Wind.		Duration of Rain.	Character of Rain.	Rain. Inches.	9 a.m.	5 p.m.	
						Force of Wind.						
April	78-80	80-86	—	—	S.W.	S.W.	7½ hours.	Slight	—	Cloudy	Cloudy	7½ hours' rain within 7 days.
May	—	—	—	—	S.W.	S.W.	6½ "	"	—	Clear	"	6½ hours' rain within 6 days.
June	—	—	—	—	S.	S.	16 "	Heavy	—	"	"	16 hours' rain within 10 days.
July	80-77	80-80	—	—	S.W.	S.W.	32½ "	Slight and heavy.	—	Cloudy	"	32½ hours' rain within 14 days.
August	78-70	81-90	—	—	S.W.	S.W.	7½ "	"	—	"	"	79½ hours' rain within 30 days.
September	80-16	82-83	—	—	S.E.	S.W.	43 "	"	—	"	"	43 hours' rain within 30 days.
October	78-84	82-19	—	—	S.E.	S.W.	12½ "	"	—	"	"	12½ hours' rain within 9 days.
November	78-86	85-6	—	—	S.E.	N.E.	½ hour	"	—	Clear	"	½ hour's rain within 2 days.
December	73-25	83-83	28-76	28-79	N.E.	N.E.	2 hours.	"	—	"	"	2 hours' rain within 1 day.

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RETURN SHOWING WEATHER OBSERVATIONS TAKEN AT YABUM DURING THE YEAR 1893.

Months.	Thermometer (Mean Tem- perature).		Barometer.		Wind.		Rain.			Atmosphere.		Remarks.
	Mean.	6 p.m.	9 a.m.	5 p.m.	General Direction of Wind.		Duration of Rain.	Character of Rain.	Rain. Inches.	9 a.m.	5 p.m.	
						Force of Wind.						
August	76-84	79-83	—	—	S.E.	S.	17½ hours	Heavy	—	Cloudy	Bright	17½ hours' rain within 6 days.
September	79-81	74-14	—	—	S.	S.	23 "	"	—	Bright	Dull	23 hours' rain within 14 days.
October	82-31	79-41	—	—	S.	S.	7 "	—	—	"	Bright	7 hours' rain within 2 days.
November	86-04	78-36	—	—	S.W.	—	—	—	—	"	Heavy.	

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RETURN SHOWING WEATHER OBSERVATIONS TAKEN AT BONA DURING THE YEAR 1898.

Months.	Thermometer (Mean Tem- perature).		Barometer.		Wind.			Rain.			Atmosphere.		Remarks.		
	9 a.m. 5 p.m.		9 a.m. 5 p.m.		General Direction of Wind.		Force of Wind.		Duration of Rain.		Character of Rain.			Rain. Inches.	
April	—	—	—	—	S.W.	—	Strong	5½ hours	Light	—	—	Clear and cloudy	5½ hours' rain within 4 days		
May	—	—	—	—	S.W.	—	Light	18½ "	Heavy	—	—	Clear and cloudy	18½ hours' rain within 7 days.		
June	—	—	—	—	S.W.	—	"	18½ "	"	—	—	Clear	18½ hours' rain within 11 days.		
July	—	—	—	—	S.W.	S.W.	"	14½ "	"	—	—	Cloudy	14½ hours' rain within 8 days.		
August	—	—	—	—	S.W.	S.W.	"	28½ "	Light and heavy.	—	—	"	Hazy and clear.	28½ hours' rain within 11 days.	

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RETURN SHOWING WEATHER OBSERVATIONS TAKEN AT WA DURING THE YEAR 1898.

Months.	Thermometer (Mean Tem- perature).		Barometer.		Wind.			Rain.			Atmosphere.		Remarks.
					General Direction of Wind.	Force of Wind.							
	9 a.m.	5 p.m.	9 a.m.	5 p.m.		9 a.m.	5 p.m.	Duration of Rain.	Character of Rain.	Rain. Inches.	9 a.m.	5 p.m.	
April	—	—	—	—	S.W.	—	Light	3 hours	Light and heavy.	—	Clear	—	3 hours' rain within 2 days.
May	—	—	—	—	S.W.	—	"	14½ "	"	—	Clear and hazy	—	14½ hours' rain within 12 days.
June	—	—	—	—	S.W.	—	"	6½ "	"	—	Clear and hazy	—	6½ hours' rain within 6 days.
July	—	—	—	—	S.W.	S.W.	Light & calm.	20 "	"	—	Clear and hazy	—	20 hours' rain within 14 days.
August	—	—	—	—	S.W.	S.W.	Light	24 "	"	—	Cloudy	Clear	24 hours' rain within 10 days.
September	—	—	—	—	S.W.	S.W.	"	33½ "	"	—	"	"	33½ hours' rain within 15 days.
October	—	—	—	—	S.W.	S.W.	"	3 "	"	—	Clear	"	3 hours' rain within 2 days.
November	—	—	—	—	S.W.	S.W.	"	—	—	—	"	Hazy.	

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RETURN SHOWS WEATHER OBSERVATIONS TAKEN AT KINTAMPO DURING THE YEAR 1898.

Month.	Thermometer (Mean Tem- perature)		Barometer.		Wind.		Rain.		Atmosphere.		Remarks.
	9 a.m.	5 p.m.	9 a.m.	5 p.m.	General Direction of Wind.	Force of Wind.	Duration of Rain.	Character of Rain.	9 a.m.	5 p.m.	
April	—	—	—	—	—	Light	—	Heavy	Cloudy	—	Rained at night 21 hours' rain within 6 days. 20 hours' rain within 14 days. 26 hours' rain within 13 days.
May	—	—	—	—	—	Light & fresh.	21 hours	"	"	—	
June	—	—	—	—	—	"	20 "	"	"	—	
July	—	—	—	—	—	"	26 "	"	Cloudy and clear	—	
October	—	—	—	—	—	—	—	—	—	—	
November	73.00	82.16	—	—	N.W. Vari- able.	—	—	—	7.23	7.00	
December	77.36 70.74	71.02 65.13	—	—	S.W. S.W.	—	—	—	7.00	5.00	

November—Average shade { Maximum, 91°
 Minimum, 66° }
 Humidity (M.) 78 } Sat., 100
 (N.) 61 }
 December—Average shade { Maximum, 85°
 Minimum, 66° }

EDWIN SELY, M.B., Assistant Col. Surgeon.

FORMULA FOR RECORDING STATE OF THE WEATHER.

- B. denotes blue sky, i.e., clear or hazy atmosphere.
 C. " cloudy—detached opening clouds.
 D. " drizzling rain.
 F. " fog. F.F., thick fog.
 G. " gloomy, dark weather.
 H. " hail.
 L. " lightning.
 M. " misty or hazy, so as to interrupt the view.
 O. " overcast, i.e., whole sky covered with an imper-
 vious cloud.
 P. " passing showers.
 Q. " squally.
 R. " rain, continuous rain.
 S. " snow.
 T. " thunder.
 U. " ugly, with a heavy appearance of the weather.
 V. " visibility of distant objects.
 W. " wet dew.

Dot (.) under any letter—an extraordinary degree.

B.O.M.—Blue sky, with detached opening clouds, but hazy round the horizon.

G.V.—Gloomy, dark weather, but distant objects remark-
ably visible.

FORMULA FOR RECORDING FORCE OF THE WIND.

0 denotes calm.

1 " light breeze—steerage way.

2 " light breeze { 1-2 knots
3 " gentle breeze { 3-4 " } clean—full.
4 " moderate breeze { 5-6 " }

5 " fresh breeze.

6 " strong breeze.

The thermometer readings were taken in a room where the thermometer was kept, and not in a screen in the open.

Maps on this order too large to be entirely included in one exposure are filmed clockwise beginning in the upper left hand corner, left to right and top to bottom as many frames as required. The following diagrams illustrate the method.

1	2
3	4

1
2

1	2	3
4	5	6
7	8	9

METEOROLOGICAL OBSERVATIONS TAKEN AT KINTAMPO HINTERLAND, IN APPROX. LAT. 8° 4' 30" N., AND LONG. 1° 5'

March, 1898.

Date.	8 A.M.						12 NOON.						4 P.M.					
	Barometer.	Thermometer.	Relative.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.		
March 1	30.00	77		—	—		30.01	82	—	—		30.73	82	—	—			
" 2	30.07	80		S.E.	B.	S. breeze (S).	30.08	82	S.W.	B.	(S) W. breeze.	30.73	82	S.E.W.	B.	(S) N.W. breeze.		
" 3	30.08	80		S.E.	C.	S. breeze (S).	30.70	80	S.W.	B.	(S) W. breeze.	30.06	81	—	B.	(S).		
" 4	30.08	82		0	M.	Breeze (S).	30.70	81	S.N.W.	B.	(S) N.W.	30.07	82	—	S.V.	Looks like thunderstorm.		
" 5	30.04	81		0	C.	Heavy wind during night.	30.70	82	0	M.		30.08	84	0	M.	Thunder in afternoon.		
" 6	30.00	81		S.E.	B.M.	S. wind.	30.77	82	S.N.	B.C.	N. wind.	30.08	81	S.W.	S.G.V.S.P.	W. Shower about 3.30 p.m.		
" 7	30.01	81		S.E.	B.C.V.	S. wind; rain during the night.	30.81	80	S.W.	B.C.		30.07	84	S.W.	B.C.M.	W. Looks like rain.		
" 8	30.01	79		0	O.	Tornado and rain during night.	30.83	80	0	O.	Perfect calm.	30.71	80	0	B.M.	Scarcely any breeze.		
" 9	30.00	80		S.W.	B.C.		30.88	87	S.W.	C.		30.74	81	S.W.	B.C.	S.W.		
" 10	30.00	80		S.E.W.	B.C.		30.91	88	S.W.	B.C.		—	—	—	—			
" 11	30.00	79		0	C.V.		30.94	84	S.E.W.	C.V.		30.70	82	0	C.	High clouds, very close and thundery.		
" 12	30.00	79		S.W.	B.C.		30.00	80	0	B.C.		30.71	80	S.W.	B.C.	W.		
" 13	30.07	81		S.E.	B.		30.83	80	S.E.	B.C.	Strong wind at times, very warm.	30.73	80	S.W.	B.C.T.	Very threatening; looks like tornado or thunderstorm.		
" 14	30.04	79		S.N.E.	O.	Rained about 6.30 a.m.	30.80	80	0	O.	No sun, very still and close.	30.88	87	0	B.C.			
" 15	30.03	79		0	B.	Very still and warm wind during night.	30.79	80	S.E.	B.C.		30.70	80	S.E.W.	S.L.T.	Rain and thunder at 3.30 p.m. R. to the north.		
" 16	30.00	79		S.E.W.	B.C.		30.80	80	S.N. by S.	C.		30.70	87	S.W.	B.C.	Nice breeze and not too hot.		
" 17	30.00	79		S.E.W.	B.C.		30.79	80	S.N. by S.	C.M.		30.70	80	S.E.	M.			
" 18	30.04	80		S.W.	B.C.	Not taken till 9 a.m. to-day.	30.78	80	S.W.	C.M.		30.70	80	S.E.E.	S.G.L.T.	Varying wind, tornado coming from S.E. (S) S.E.		
" 19	30.00	81		S.W.	B.C.		30.80	80	S.W.	B.C.		30.71	80	—	S.T.D.	Rain about 3.30 p.m.		
" 20	30.03	79		S.W.	C.		30.81	84	S.W.	B.C.	Very cloudy; looks like more rain.	30.74	87	0	C.	Looking very threatening.		
" 21	30.00	79		0	O.U. V.	Tornado during the night; drizzle rain till 7 a.m.	30.82	80	0	O.	Cloudy; looks like rain.	30.70	84	S.E.W.	C.			
" 22	30.00	79		0	O.		30.83	84	S.W.	C.		30.70	80	0	C.M.	Very still and close.		
" 23	30.07	79		0	O.		30.83	80	S.W.	C.M.	Cloudy.	30.74	80	S.W.	C.M.T.	Thunder to S. and E.; looks like tornado.		
" 24	30.07	81		S.W.	B.M.		30.80	80	S.E.W.	M.		30.76	82	0	M.T.	Very close, shower. Thunder to N.E.; looks like tornado.		
" 25	30.00	79		S.E.	B.C.	Great wind during night.	30.79	80	S.W.	B.C.	Lovely day, with wind at times.	30.70	81	S.E.	B.C.	Rain about 3.30 p.m.; looks very threatening.		
" 26	30.00	81		S.W.	B.M.		30.80	80	S.W.	B.C.M.		30.74	80	S.E.	B.C.			
" 27	30.00	79		S.E.	B.C.V.	Strong wind during the night.	30.83	80	S.E. by S.	B.M.		30.70	82	S.E.	B.C.			
" 28	30.00	80		S.E.W.	B.C.	Beautiful morning.	30.83	80	0	B.C.		30.70	80	S.W.	B.C.	Beautiful afternoon.		
" 29	30.00	81		S.W.	B.C.	Little rain during night.	30.81	81	S.E.W.	B.C.		30.70	80	S.W. by S.	B.C.L.	Thunder to N.E. Tornado to S. about 3.30 p.m.		
" 30	30.07	81		S.E.W.	B.C.V.		30.80	80	S.W.	B.C.		30.70	80	S.E.	B.C.B.T.	Slight thunderstorm from N., heavy rain.		
" 31	30.00	80		S.E.	B.C.	Not taken till 9 a.m.	30.07	80	S.E.	B.C.		30.70	80	S.W.	B.C.			
Sum	304.00	2,400	—	—	—		300.84	2,700	—	—		300.00	2,710	—	—			
Mean	30.00	79.00	—	—	—		30.81	87.00	—	—		30.70	80.4	—	—			

OBSERVATIONS TAKEN AT KINTAMPO HINTERLAND, IN APPROX. LAT. 8° 4' 30" N., AND LONG. 1° 33' 0" W.

(To face p. 103.)

March, 1898.

Date.	12 NOON.					4 P.M.					8 P.M.				
	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.
night.	20-01	86	—	—		20-73	82	—	—		20-02	86	—	—	
	20-02	86	S.W.	B.	(1) W. breeze.	20-73	80	S.W.	B.	(1) N.W. breeze.	20-03	86	0	B.	(2).
	20-03	86	S.W.	B.	(2) W. breeze.	20-05	81	—	B.	(3).	—	—	—	—	
	20-04	86	S.W.	B.	(3) N.W.	20-06	80	—	G.V.	Looks like thunderstorm.	20-05	86	S.E.	O.	(3). Breeze S. and E., looks like thunderstorm; lightning.
	20-05	86	0	M.		20-06	84	0	M.	Thunder in afternoon.	20-06	86	0	O.	Lightning.
	20-06	86	S.W.	R.O.	N. wind.	20-07	81	S.W.	R.O.V.T.P.	W. Shower about 3.30 p.m.	20-07	86	0	C.L.T.	Looks like rain, clouds high, but look like tornado.
	20-07	86	S.W.	R.O.		20-07	84	S.W.	R.O.M.	W. Looks like rain.	20-08	86	0 N.E.	R.O.T.	N.E.
	20-08	86	0	O.	Perfect calm.	20-08	80	0	R.M.	Scarcely any breeze.	20-09	84	0	O.	Perfect calm.
	20-09	86	S.W.	G.		20-09	81	S.W.	R.O.	S.W.	20-10	87	0	B.	
	20-10	86	S.W.	R.O.		—	—	—	—		20-11	81	S.E.	C.L.T.	Looks like a tornado, rain about 9 p.m.
a.m.	20-11	86	S.W.	R.O.		20-10	80	0	O.	High clouds, very close and threatening.	20-12	84	0	B.	Stars showing, but a little cloudy.
	20-12	86	S.W.	R.O.		20-11	80	0	O.	High clouds, very close and threatening.	20-13	84	0	B.	
	20-13	86	S.W.	R.O.		20-12	80	0	O.	High clouds, very close and threatening.	20-14	84	0	R.O.	
	20-14	86	S.W.	R.O.		20-13	80	0	O.	High clouds, very close and threatening.	20-15	84	0	R.O.	
	20-15	86	S.W.	R.O.		20-14	80	0	O.	High clouds, very close and threatening.	20-16	84	0	R.O.	
	20-16	86	S.W.	R.O.		20-15	80	0	O.	High clouds, very close and threatening.	20-17	84	0	R.O.	
	20-17	86	S.W.	R.O.		20-16	80	0	O.	High clouds, very close and threatening.	20-18	84	0	R.O.	
	20-18	86	S.W.	R.O.		20-17	80	0	O.	High clouds, very close and threatening.	20-19	84	0	R.O.	
	20-19	86	S.W.	R.O.		20-18	80	0	O.	High clouds, very close and threatening.	20-20	84	0	R.O.	
	20-20	86	S.W.	R.O.		20-19	80	0	O.	High clouds, very close and threatening.	20-21	84	0	R.O.	
a.m. wind during night.	20-21	86	S.W.	R.O.		20-20	80	0	O.	High clouds, very close and threatening.	20-22	84	0	R.O.	
	20-22	86	S.W.	R.O.		20-21	80	0	O.	High clouds, very close and threatening.	20-23	84	0	R.O.	
	20-23	86	S.W.	R.O.		20-22	80	0	O.	High clouds, very close and threatening.	20-24	84	0	R.O.	
	20-24	86	S.W.	R.O.		20-23	80	0	O.	High clouds, very close and threatening.	20-25	84	0	R.O.	
	20-25	86	S.W.	R.O.		20-24	80	0	O.	High clouds, very close and threatening.	20-26	84	0	R.O.	
	20-26	86	S.W.	R.O.		20-25	80	0	O.	High clouds, very close and threatening.	20-27	84	0	R.O.	
	20-27	86	S.W.	R.O.		20-26	80	0	O.	High clouds, very close and threatening.	20-28	84	0	R.O.	
	20-28	86	S.W.	R.O.		20-27	80	0	O.	High clouds, very close and threatening.	20-29	84	0	R.O.	
	20-29	86	S.W.	R.O.		20-28	80	0	O.	High clouds, very close and threatening.	20-30	84	0	R.O.	
	20-30	86	S.W.	R.O.		20-29	80	0	O.	High clouds, very close and threatening.	20-31	84	0	R.O.	
a.m. to-day.	20-31	86	S.W.	R.O.		20-30	80	0	O.	High clouds, very close and threatening.	20-32	84	0	R.O.	
	20-32	86	S.W.	R.O.		20-31	80	0	O.	High clouds, very close and threatening.	20-33	84	0	R.O.	
	20-33	86	S.W.	R.O.		20-32	80	0	O.	High clouds, very close and threatening.	20-34	84	0	R.O.	
	20-34	86	S.W.	R.O.		20-33	80	0	O.	High clouds, very close and threatening.	20-35	84	0	R.O.	
	20-35	86	S.W.	R.O.		20-34	80	0	O.	High clouds, very close and threatening.	20-36	84	0	R.O.	
	20-36	86	S.W.	R.O.		20-35	80	0	O.	High clouds, very close and threatening.	20-37	84	0	R.O.	
	20-37	86	S.W.	R.O.		20-36	80	0	O.	High clouds, very close and threatening.	20-38	84	0	R.O.	
	20-38	86	S.W.	R.O.		20-37	80	0	O.	High clouds, very close and threatening.	20-39	84	0	R.O.	
	20-39	86	S.W.	R.O.		20-38	80	0	O.	High clouds, very close and threatening.	20-40	84	0	R.O.	
	20-40	86	S.W.	R.O.		20-39	80	0	O.	High clouds, very close and threatening.	20-41	84	0	R.O.	
night; shower rain.	20-41	86	S.W.	R.O.		20-40	80	0	O.	High clouds, very close and threatening.	20-42	84	0	R.O.	
	20-42	86	S.W.	R.O.		20-41	80	0	O.	High clouds, very close and threatening.	20-43	84	0	R.O.	
	20-43	86	S.W.	R.O.		20-42	80	0	O.	High clouds, very close and threatening.	20-44	84	0	R.O.	
	20-44	86	S.W.	R.O.		20-43	80	0	O.	High clouds, very close and threatening.	20-45	84	0	R.O.	
	20-45	86	S.W.	R.O.		20-44	80	0	O.	High clouds, very close and threatening.	20-46	84	0	R.O.	
	20-46	86	S.W.	R.O.		20-45	80	0	O.	High clouds, very close and threatening.	20-47	84	0	R.O.	
	20-47	86	S.W.	R.O.		20-46	80	0	O.	High clouds, very close and threatening.	20-48	84	0	R.O.	
	20-48	86	S.W.	R.O.		20-47	80	0	O.	High clouds, very close and threatening.	20-49	84	0	R.O.	
	20-49	86	S.W.	R.O.		20-48	80	0	O.	High clouds, very close and threatening.	20-50	84	0	R.O.	
	20-50	86	S.W.	R.O.		20-49	80	0	O.	High clouds, very close and threatening.	20-51	84	0	R.O.	
night.	20-51	86	S.W.	R.O.		20-50	80	0	O.	High clouds, very close and threatening.	20-52	84	0	R.O.	
	20-52	86	S.W.	R.O.		20-51	80	0	O.	High clouds, very close and threatening.	20-53	84	0	R.O.	
	20-53	86	S.W.	R.O.		20-52	80	0	O.	High clouds, very close and threatening.	20-54	84	0	R.O.	
	20-54	86	S.W.	R.O.		20-53	80	0	O.	High clouds, very close and threatening.	20-55	84	0	R.O.	
	20-55	86	S.W.	R.O.		20-54	80	0	O.	High clouds, very close and threatening.	20-56	84	0	R.O.	
	20-56	86	S.W.	R.O.		20-55	80	0	O.	High clouds, very close and threatening.	20-57	84	0	R.O.	
	20-57	86	S.W.	R.O.		20-56	80	0	O.	High clouds, very close and threatening.	20-58	84	0	R.O.	
	20-58	86	S.W.	R.O.		20-57	80	0	O.	High clouds, very close and threatening.	20-59	84	0	R.O.	
	20-59	86	S.W.	R.O.		20-58	80	0	O.	High clouds, very close and threatening.	20-60	84	0	R.O.	
	20-60	86	S.W.	R.O.		20-59	80	0	O.	High clouds, very close and threatening.	20-61	84	0	R.O.	
the night.	20-61	86	S.W.	R.O.		20-60	80	0	O.	High clouds, very close and threatening.	20-62	84	0	R.O.	
	20-62	86	S.W.	R.O.		20-61	80	0	O.	High clouds, very close and threatening.	20-63	84	0	R.O.	
	20-63	86	S.W.	R.O.		20-62	80	0	O.	High clouds, very close and threatening.	20-64	84	0	R.O.	
	20-64	86	S.W.	R.O.		20-63	80	0	O.	High clouds, very close and threatening.	20-65	84	0	R.O.	
	20-65	86	S.W.	R.O.		20-64	80	0	O.	High clouds, very close and threatening.	20-66	84	0	R.O.	
	20-66	86	S.W.	R.O.		20-65	80	0	O.	High clouds, very close and threatening.	20-67	84	0	R.O.	
	20-67	86	S.W.	R.O.		20-66	80	0	O.	High clouds, very close and threatening.	20-68	84	0	R.O.	
	20-68	86	S.W.	R.O.		20-67	80	0	O.	High clouds, very close and threatening.	20-69	84	0	R.O.	
	20-69	86	S.W.	R.O.		20-68	80	0	O.	High clouds, very close and threatening.	20-70	84	0	R.O.	
	20-70	86	S.W.	R.O.		20-69	80	0	O.	High clouds, very close and threatening.	20-71	84	0	R.O.	
the night.	20-71	86	S.W.	R.O.		20-70	80	0	O.	High clouds, very close and threatening.	20-72	84	0	R.O.	
	20-72	86	S.W.	R.O.		20-71	80	0	O.	High clouds, very close and threatening.	20-73	84	0	R.O.	
	20-73	86	S.W.	R.O.		20-72	80	0	O.	High clouds, very close and threatening.	20-74	84	0	R.O.	
	20-74	86	S.W.	R.O.		20-73	80	0	O.	High clouds, very close and threatening.	20-75	84	0	R.O.	
	20-75	86	S.W.	R.O.		20-74	80	0	O.	High clouds, very close and threatening.	20-76	84	0	R.O.	
	20-76	86	S.W.	R.O.		20-75	80	0	O.	High clouds, very close and threatening.	20-77	84	0	R.O.	
	20-77	86	S.W.	R.O.		20-76	80	0	O.	High clouds, very close and threatening.	20-78	84	0	R.O.	
	20-78	86	S.W.	R.O.		20-77	80	0	O.	High clouds, very close and threatening.	20-79	84	0	R.O.	
	20-79	86	S.W.	R.O.		20-78	80	0	O.	High clouds, very close and threatening.	20-80	84	0	R.O.	
	20-80	86	S.W.	R.O.		20-79	80	0	O.	High clouds, very close and threatening.	20-81	84	0	R.O.	
the night.	20-81	86	S.W.	R.O.		20-80	80	0	O.	High clouds, very close and threatening.	20-82	84	0	R.O.	
	20-82	86	S.W.	R.O.		20-81	80	0	O.	High clouds, very close and threatening.	20-83	84	0	R.O.	
	20-83	86	S.W.	R.O.		20-82	80	0	O.	High clouds, very close and threatening.	20-84	84	0	R.O.	
	20-84	86	S.W.	R.O.		20-83	80	0	O.	High clouds, very close and threatening.	20-85	84	0	R.O.	
	20-85	86	S.W.	R.O.		20-84	80	0	O.	High clouds, very close and threatening.	20-86	84	0	R.O.	
	20-86	86	S.W.	R.O.		20-85	80	0	O.	High clouds, very close and threatening.	20-87	84	0	R.O.	
	20-87	86	S.W.	R.O.		20-86	80	0	O.	High clouds, very close and threatening.	20-88	84	0	R.O.	
	20-88	86	S.W.	R.O.		20-87	80	0	O.	High clouds, very close and threatening.	20-89	84	0	R.O.	
	20-89	86	S.W.	R.O.		20-88	80	0	O.	High clouds, very close and threatening.	20-90	84	0	R.O.	
	20-90	86	S.W.	R.O.		20-89	80	0	O.	High clouds, very close and threatening.	20-91	84	0	R.O.	
the night.	20-91	86	S.W.	R.O.		20-90	80	0	O.	High clouds, very close and threatening.	20-92	84	0	R.O.	
	20-92	86	S.W.	R.O.		20-91	80	0	O.	High clouds, very close and threatening.	20-93	84	0	R.O.	
	20-93	86	S.W.	R.O.		20-92	80	0	O.	High clouds, very close and threatening.	20-94	84	0	R.O.	
	20-94	86	S.W.	R.O.		20-93	80	0	O.	High clouds, very close and threatening.	20-95	84	0	R.O.	
	20-95	86	S.W.	R.O.		20-94	80	0	O.	High clouds, very close and threatening.	20-96	84	0	R.O.	
	20-96	86	S.W.	R.O.		20-95	80	0	O.	High clouds, very close and threatening.	20-97	84	0	R.O.	
	20-97	86	S.W.	R.O.		20-96	80	0	O.	High clouds, very close and threatening.	20-98	84	0	R.O.	
	20-98	86	S.W.	R.O.		20-97	80	0	O.	High clouds, very close and threatening.	20-99	84	0	R.O.	
	20-99	86	S.W.	R.O.		20-98	80	0	O.	High clouds, very close and threatening.	20-100	84	0	R.O.	
	20-100	86	S.W.	R.O.		20-99	80	0	O.	High clouds, very close and threatening.	20-101	84	0	R.O.	
the night.	20-101	86	S.W.	R.O.		20-100	80	0	O.	High clouds, very close and threatening.	20-102	84	0	R.O.	
	2														

METEOROLOGICAL OBSERVATIONS TAKEN AT KINTAMPO HINTERLAND, IN APPROX. LAT. 8° 4' 30" N., AND LONG. 1°

April, 1898.

Date.	8 A.M.						12 NOON.					4 P.M.					Date.	
	Barometer.	Thermometer.	Wind.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.		
April 1 ..	29.92	80	—	S.E.	E.	Tornado and rain between 11 p.m. and midnight, 31st March. Very high wind (S.) all night.	29.90	87	1 S.	R.C.	Is rather very heavy and thick all morning, very little sun, strong tornado at 11 a.m., heavy rain. Bar. 29.90. Therm. 79°. Rainfall day.	29.70	91	1 S.	R.C.	Taken at 4.45 p.m.	29.53	
" 2 ..	29.90	77	—	S.W.	R.Q.	Tornado to N. about 2 a.m.; tornado and heavy rain about 6 a.m.	29.94	74	S.N.E.	Q.U.		29.70	70	1 W.	O.V.		29.57	
" 3 ..	29.94	74	—	1 W.	O.G.	The dawn was dark and a cold wind from W.	29.90	80	1 S.	R.C.		29.90	80	1 W.	R.C.V.		29.67	
" 4 ..	29.90	70	—	1 W.	R.	Beautiful morning.	29.90	84	1 W.	R.C.		29.90	91	1 N.	R.C.	Thunder and the appearance of a	29.70	
" 5 ..	29.90	74	—	—	O.		29.92	81	—	O.			—	—	—	G. to E.	tornado to the east.	—
" 6 ..	29.90	70	—	1 W.	R.		29.90	86	S.W.	R.C.		29.91	91	1 S.W.	R.C.		29.50	
" 7 ..	29.90	74	—	S.S.W.	R.C.	Tornado during the night.	29.97	80	0	R.C.		29.90	80	0	R.C.		29.50	
" 8 ..	29.94	70	—	S.S.W.	R.C.	Wind during the night.	29.90	80	1 S.W.	R.C.		29.91	81	0	R.C.		29.57	
" 9 ..	29.90	70	—	S.W. by S.	R.C.		29.91	80	S.W. by N.	R.C.		29.92	80	1 S.W.	S.N.T.	Very close, thunder to the S.E.; taken at 4.30 p.m.	29.72	
" 10 ..	29.90	70	—	0	R.C.H.		29.94	80	0	R.C.H.		29.90	84	0	U.I.	Tornado about 2 p.m. from N.E. to S.W. Rain and wind at 2 p.m. Bar. 29.90. Therm. 80°.	29.50	
" 11 ..	29.97	74	—	0	O.	Heavy tornado during the night; plenty of rain during the night.	29.91	80	0	O.	29.90	80	1 S.E.	R.C.		29.70		
" 12 ..	29.90	80	—	0	R.C.		29.90	80	S.E.	R.C.	29.90	80	1 S.	R.C.		29.55		
" 13 ..	29.92	70	—	1 W.	O.		29.91	80	1 W.	R.C.	29.90	80	0	R.C.		29.70		
" 14 ..	29.92	70	—	0	O.N.D.	Fleets of lightning and thunder during the night and steady rain towards morning to the S.E.	29.94	70	0	R.C.	29.97	80	1 W.	R.C.		29.70		
" 15 ..	29.90	81	—	0 1 S.W.	R.		29.90	80	0	R.C.	29.90	80	0	R.	Taken at 5 p.m. Thunder and rain about 2 p.m.; no rain.	29.70		
" 16 ..	29.90	70	—	1 S.W.	R.	Strong tornado wind during the night, but no rain.	29.90	80	0	O.	29.94	80	1 W. by E.	O.		29.74		
" 17 ..	29.90	81	—	1 N.	R.	Beautiful, hot morning, little wind.	29.91	80	1 S.	R.C.	29.90	80	1 S.W.	R.		29.70		
" 18 ..	29.90	80	—	S.E.	R.		29.91	87	S.S.W.	R.C.	29.90	80	S.S.W.	R.V.		29.57		
" 19 ..	29.94	70	—	1 S.	R.		29.90	87	0	R.	—	—	—	—		—		
Sum ..	29.90	1,000	—	—	—		29.90	1,000	—	—	29.90	1,000	—	—		29.70		
Mean ..	29.94	77.54	—	—	—		29.90	84	—	—	29.90	87.17	—	—		29.55		

CAL OBSERVATIONS TAKEN AT KINTAMPO HINTERLAND, IN APPROX. LAT. 8° 4' 30" N., AND LONG. 1° 38' 0" W.

(To face p. 100.)

April, 1898.

Remarks.	12 NOON.					Remarks.	4 P.M.					Remarks.	8 P.M.				
	Barometer.	Thermometer.	Wind.	Weather.	Barometer.		Thermometer.	Wind.	Weather.	Barometer.	Thermometer.		Wind.	Weather.			
d rain between 11 p.m. and 12 m. March. Very high all night. N. about 2 a.m.; tornado y rain about 6 a.m.	28.98	87	1 S.	B.C.	Is rather very heavy and thick all morning, very little sun, strong tornado at 11 a.m., heavy rain. Bar. 29.00. Therm. 78°. Beautiful day.	28.78	91	2 S.	B.C.	Taken at 4.40 p.m.	28.83	87	(1) S.	B.	Clear moonlight night.		
	28.94	74	6 N.E.	Q.U.		28.79	76	1 W.	O.V.	28.87	75	1 N.	O.	Moon hazy-looking, a few stars showing, sky otherwise overcast.			
	28.90	80	1 S.	B.C.		28.80	80	1 W.	B.C.V.	28.87	82	1 S.	B.	Clear moonlight night, stars bright.			
	28.90	84	1 W.	B.C.		28.80	91	1 N.	B.C., O. to E.	28.92	90	1 W.	L.T.O.D.	Looks like tornado; slight rain and cloudy sky.			
	28.92	81	—	O.		—	—	—	—	—	—	—	—	—	—		
	28.92	85	2 W.	B.C.		28.81	91	1 S.W.	B.C.	28.89	85	0	B.	—	—		
	28.87	83	0	B.C.		28.80	88	0	B.C.	28.89	83	0	B.	—	—		
	28.89	85	1 S.W.	B.C.		28.81	81	0	B.C.	28.87	85	0	B.	—	—		
	28.91	86	3 W. by N.	B.C.		28.82	90	1 N.W.	U.M.T.	28.92	82	1 S.E.	B.L.T.	Lightning to E. and S.E.			
	28.83	86	0	B.C.M.		28.83	84	0	U.I.	28.89	85	0	—	—	—		
ado during the night; plenty wing the night.	28.91	80	0	O.	28.88	82	1 S.E.	B.C.	28.92	85	—	—	—	—			
	28.89	85	2 S.	B.C.	28.90	88	1 S.	B.C.	28.95	85	0	B.	—	—			
	28.91	85	1 W.	B.C.	28.90	89	0	B.C.	28.90	84	0	B.C.L.	About 9.30 p.m. a tornado of wind, but no rain; lightning and thunder.				
	28.94	79	0	B.C.	28.87	85	1 W.	B.C.	28.93	80	0	B.					
	28.95	86	0	B.C.	28.86	89	0	B.	28.90	84	0	B.	—	—			
	28.93	88	0	O.	28.85	89	1 W. by N.	O.	28.94	85	0	B.C.L.	—	—			
	28.91	88	1 S.	B.C.	28.82	90	1 S.W.	B.	28.90	84	1 S.	B.	—	—			
	28.91	87	2 S.W.	B.C.	28.80	90	2 S.W.	B.V.	28.87	85	1 S.W.	B.	—	—			
	28.92	87	0	B.	—	—	—	—	—	—	—	—	—	—			
	348.93	1,595	—	—	494.99	1,482	—	—	491.16	1,416	—	—	—	—			
28.89	84	—	—	28.82	87.17	—	—	28.89	83.29	—	—	—	—				

METEOROLOGICAL OBSERVATIONS TAKEN AT BONA HINTERLAND, IN LAT. $9^{\circ} 16' 8''$ N., AND LONG. $2^{\circ} 59' 37''$ W
June, 1898.

Date.	8 A.M.						12 NOON.						4 P.M.					
	Barometer.	Thermometer.	Relative (Celsius).	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.
June 2 ...	29.98	75	—	S.E.	C.		29.94	75	0	O.		29.95	81	0	E.C.		—	—
3 ...	29.98	76	—	S.W.	O.D.		29.98	81	0	E.C.		29.98	82	1 W.	E.C.	Heavy clouds to north, and looks like rain.	29.98	81
4 ...	29.94	76	—	S.W.	C.		29.98	82	0	E.		—	—	—	—	—	—	—
5 ...	29.97	76	—	S.W.	C.	Rain in the morning about 3.30 a.m.	29.98	82	0	O.		29.98	82	1 N.W.	E.C.		29.98	81
6 ...	29.94	77	—	0	O.D.	Looks like rain, sky overcast and murky.	29.98	82	0	E.C.	The sky has been overcast all the morning.	29.98	82	0	T.O.	Thunder and rain to the N. by W., very close, sky overcast.	29.98	81
7 ...	29.98	76	—	0	O.	Slight drizzle for a short time during the morning.	29.98	82	0	E.C.		29.98	82	1 S.W.	E.C.		29.98	82
8 ...	29.97	76	—	0	E.C.		29.98	82	1 S.W.	E.C.		29.98	82	0	E.C.		29.98	82
9 ...	29.98	76	—	0	E.C.		29.98	82	0	—		—	—	—	—		—	—
10 ...	29.98	76	—	—	E.C.		—	—	—	—		—	—	—	—		—	—
11 ...	29.98	76	—	—	E.C.		—	—	—	—		—	—	—	—		—	—
12 ...	—	—	—	—	—		—	—	—	—		—	—	—	—		—	—
13 ...	29.98	77	—	S.W.	O.	Weather threatening.	29.94	82	1 S.W.	E.C.	A little breeze now and again.	29.98	82	1 W.A.W.	E.C.		29.98	81
14 ...	29.94	77	—	S.W.	O.	A cold morning.	—	82	0	E.C.	Heavy tornado about 2 p.m., lasting for about an hour.	29.98	77	0	O.		29.98	77
15 ...	29.98	74	—	S.W.	O.	A cold morning and looks threatening.	29.98	84	0	E.C.		29.98	82	0	E.C.		29.98	80
16 ...	29.98	77	—	1 S.W.	O.		29.94	80	0	E.C.	At 1.30 p.m. it seemed to threaten a tornado; slight rain at 5-5.45 p.m.	29.97	77	0	E.C.	Heavy dark clouds to the south, and very close.	29.98	77
17 ...	29.98	76	—	1 S.W.	E.C.		29.98	81	1 N.E.	E.C.		29.94	84	0	E.C.		29.98	80
18 ...	29.98	77	—	1 W. by S.	C.	A cold morning and cloudy, scarcely any blue to be seen.	29.98	82	0	E.C.		29.98	82	0	E.C.		29.98	82
19 ...	29.94	79	—	S.W. by S.	C.		29.98	82	1 S.W.	E.C.		29.98	82	1 S.W.	E.C.		—	—
20 ...	29.98	77	—	1 S.W.	C.	A dark morning.	29.98	81	4 S.W.	E.C.		29.98	82	1 S.W.	E.C.		29.98	82
21 ...	29.94	76	—	0	C.	Rained about 4 a.m. and looks like more rain.	—	—	—	—		29.98	82	0	E.C.		29.98	80
22 ...	29.98	77	—	S.W.	C.		29.98	81	0	C.		29.98	84	1 S.W.	E.C.		29.98	80
23 ...	29.98	76	—	0	E.C.		29.98	82	1 W.	E.C.		29.98	84	S.S.W.	E.C.T.		29.98	80
On night of 23rd the height of Bona above sea level was taken by boiling point thermo meter, and the barometer altered from 29.98 to 29.987 (1,000 feet).																		
24 ...	29.98	77	—	0	E.C.		29.98	81	0	E.C.		29.98	84	0	E.C.		29.98	80
25 ...	29.91	77	—	1 S.W.	C.	Looks threatening.	29.98	82	0	C.		29.98	79	0	O.		29.98	77
26 ...	29.98	76	—	1 S.W.	C.	Heavy rain during morning.	29.98	76	0	O.		29.98	79-80	0	E.C.	Sunshine came on about 4.30 p.m.	29.98	77
27 ...	29.94	75	104	0	O.	A cloudy morning.	29.98	77	1 S.W.	C.		29.94	81	0	E.		29.98	77
28 ...	—	—	—	—	—		29.98	79	1 S.W.	E.C.		29.98	82	1 S.W.	E.C.		29.98	80
29 ...	29.98	77	—	1 W. by S.	D.E.		29.98	78	0	E.C.		29.98	82	0	E.C.		—	—
30 ...	29.98	77	104	1 S.W.	O.		29.98	80	0	E.C.		29.98	82	0	E.C.T.	Heavy clouds to S.	29.98	77
Mean	29.94	1,000	272	—	—		29.94	2,004	—	—		29.94	1,000-2	—	—		29.94	1,000
Mean	29.98	76-81	7-98	—	—		29.98	82-87	—	—		29.98	82-84	—	—		29.98	80

N.B.—The barometer was accidentally moved in May, and was not corrected till the night of 23rd June, 1898. The rain was collected by means of a funnel $8\frac{1}{2}$ inches in diameter, and the amount so obtained.

June, 1898.

(To face p. 100.)

oved in May, and was not corrected till the night of 23rd June, 1898. The rain was collected by means of a funnel $5\frac{1}{2}$ inches in diameter, and the amount so obtained is entered in tablespoonful.

METEOROLOGICAL OBSERVATIONS TAKEN AT BONA HINTERLAND, IN LAT. 9° 16' 8" N., AND LONG. 8° 14' 10" W.,
July, 1898.

Date.	9 A.M.					Remarks.	12 NOON.					Remarks.	4 P.M.					Remarks.
	Barometer.	Thermometer.	Wind.	Weather.	Barometer.		Thermometer.	Wind.	Weather.	Barometer.	Thermometer.		Wind.	Weather.				
July 1...	29.94	77	—	1 S.W.	O.	Looks threatening.	29.98	79	SW. by E.	B.C.	Heavy rain.	29.94	82	—	0	B.C.	Cloudy to north and west. Blue at east.	
" 2...	29.95	76	—	SW. by E.	B.C.		29.95	79	SW. by E.	B.C.		29.95	81	1 S.W.	B.C.			
" 3...	29.95	76.50	—	0	B.C.		29.95	81.25	1 W.	B.C.		29.95	82	1 S.W.	B.C.			
" 4...	29.95	77	—	2 S.W.	O.		29.91	81	1 S.W.	B.C.		29.95	82	0	B.			
" 5...	29.94	76	0	0	O.		29.95	79	2 S.	O.		29.95	79.50	1 S.W.	O.			
" 6...	29.97	76	—	2 S.W.	O.		29.95	79	0	O.		29.95	79	0	B.			
" 7...	29.98	76	—	0	B.		29.95	81	1 S.W.	B.		29.95	—	0	B.			
" 8...	29.98	76	—	1 S.W.	O.		29.95	81.50	1 N.W.	O.		29.95	80	1 W.	B.			
" 9...	29.98	77	1½	0	O.		29.95	81	SW. by E.	B.C.		29.95	80	2 S.W.	B.C.			
" 10...	29.94	76	—	0 S.W.	O.		29.95	82	SW. by E.	C.		29.95	80	1 S.W.	B.C.			
" 11...	29.95	77	—	1 S.W.	C.	29.91	79	0	U.R.	A drizzling rain, not heavy.	29.94	77	1 W. by E.	B.C.	Cloudy to north and west. Blue at east.			
" 12...	29.95	76	204	SW.	C.	29.95	79	1 W.	C.		29.95	80	0	O.		Rained between 9 and 6 p.m.		
" 13...	29.95	77	4	SW.	B.C.	29.95	80	SW.	O.		29.95	81	0	B.U.T.				
" 14...	29.95	77	—	1 W.	C.	29.95	80.50	2 S.S.W.	B.C.		29.95	84	0	U.T.		Heavy rain and thunder to N.W. No sky to E. and S. Looks like a storm coming from E. to N.W.		
" 15...	29.94	76	88	0	O.R.T.	29.95	77	2 S.W.	O.V.		29.97	79	0	O.V.				
" 16...	29.95	76	73	1 S.	U.	Steady heavy rain came on about 7.30 a.m. Heavy dark clouds to N.W.	29.95	79	1 W.		O.	29.95	80	0		B.C.	Heavy clouds round horizon.	
" 17...	29.95	76	204	0	O.V.		29.95	77.50	0		O.D.	29.95	80.50	1 W.		B.C.		
" 18...	29.97	76	—	0	O.	Heavy dew during the night.	—	—	0		O.D.	29.95	79	0		B.		
" 19...	29.95	75.50	1½	SW. by E.	O.V.		29.95	79	2 S.W.		O.	29.97	79	1 S.W.		B.C.		
" 20...	29.95	76	—	10 W.	C.W.		29.95	77.50	1 S.W.		C.	29.95	79	0		B.C.		
" 21...	29.97	74	0	SW. by E.	O.H.W.		29.95	79	4 S.W.	C.	29.97	79	1 W.	O.D.	Clouds about and a drizzling rain, a heavy; sun shining.			
" 22...	29.97	74	0	0	C.		29.95	77	SW. by E.	B.C.	29.95	75	1 W.	C.				
" 23...	29.97	74	—	2 S.W.	B.C.		Taken at 9 a.m.	29.95	77	2 S.W.	B.C.	29.95	76	1 S.W.	C.			
" 24...	29.95	73	—	2 S.W.	O.			29.97	74	2 S.W.	O.	29.95	76.50	1 S.W.	O.	The sky though is close to W.		
" 25...	29.95	74	—	2 S.W.	C.		29.95	76	1 S.W.	B.C.	29.95	75	0	B.C.				
" 26...	29.95	76	—	1 S.W.	O.H.		Rained during the night. Looks threatening.	29.95	77.50	2 S.W.	C.	High clouds.	29.95	79	2 S.W.	B.C.	A good many clouds; looks like trouble up for rain. Beautiful evening.	
" 27...	29.95	76	04	0	O.			29.95	79	2 S.W.	O.		29.95	77.50	1 W.	B.C.		
" 28...	29.94	74	1½	2 S.W.	O.V.	29.95		75	4 S.W.	O.V.	29.95		76	2 S.W.	B.C.			
" 29...	29.95	74	1½	1 S.W.	O.	29.94		76	2 S.W.	O.	29.94		79	1 S.W.	B.C.			
" 30...	29.95	76	1	2 S.W.	O.	29.95		76	1 S.W.	O.	29.95		80	1 S.W.	B.C.			
" 31...	—	—	—	—	—	29.95		77.50	1 S.W.	C.	29.95		80	2 S.	B.C.			
Mean	29.94	7.50	1704	—	—	29.97		7.50.25	—	—	29.95		7.50.50	—	—			
Range	29.95	75.50	0.971	—	—	29.94		75.50	—	—	29.95		79.50	—	—			

LOGICAL OBSERVATIONS TAKEN AT BONA HINTERLAND, IN LAT. 9° 16' 8" N., AND LONG. 2° 59' 37" W.

(70 Jan p. 103.)

July, 1892.

Remarks.	12 NOON.				Remarks.	4 P.M.				Remarks.	8 P.M.				Remarks.
	Barometer.	Thermometer.	Wind.	Weather.		Barometer.	Thermometer.	Wind.	Weather.		Barometer.	Thermometer.	Wind.	Weather.	
	29.98	80	S.W. by S.	B.C.		29.94	80	0	B.C.		29.94	81	0	B.C.	
	29.98	79	S.W. by S.	B.C.		29.94	81	1 S.W.	B.C.		29.94	81	0	B.	
	29.98	81.50	1 W.	B.C.		29.94	80	1 S.W.	B.C.		29.94	81	0	B.	
	29.98	80	1 S.W.	B.C.		29.94	80	0	B.		29.94	82	0	C.L.Y.	
	29.98	79	S.E.	O.		29.94	79.50	1 S.W.	O.		29.94	77.50	0	B.	
	29.98	79	0	O.		29.94	79	0	B.		29.94	76	0	G.	
	29.98	81	1 S.W.	B.		29.94	—	0	B.		29.94	80	0	B.	
	29.98	81.50	1 N.W.	O.		29.94	80	1 W.	B.		29.94	80	0	B.	
	29.98	81	S.W. by S.	B.C.		29.94	80	S.E.W.	B.C.		29.94	81	0	B.	Beautiful starry night.
	29.98	80	S.W. by S.	O.		29.94	80	1 S.W.	B.C.	Cloudy to north and west. Blue sky to east.	29.94	80	S.E.W.	G.L.	Lightning to north.
	29.94	79	0	U.R.	Heavy rain.	29.94	77	1 W. by S.	B.C.		29.94	77	0	B.C.	
	29.94	79	1 W.	O.		29.94	80	0	O.	Rained between 6 and 8 p.m.	29.94	80	0	B.C.	
	29.94	80	S.W.	O.		29.94	81	0	R.U.T.	Heavy rain and thunder to N.W. Blue sky to E. and S.	29.94	80	0	B.C.L.	
	29.94	80.50	S.E.S.W.	B.C.		29.94	84	0	U.T.	Looks like a storm coming from E. to N.W.	29.94	77	1 W.	O.L.	Heavy rain from 6 to 7 p.m.
	29.94	77	S.E.W.	G.V.		29.94	79	0	G.V.		29.94	78	0	B.C.	
	29.94	76	1 W.	O.		29.94	80	0	B.C.	Heavy clouds round horizon.	29.94	79.50	0	G.R.L.	Very heavy rain, looking long trees; came on about 5.30 p.m.
	29.94	77.50	0	O.D.	A drizzling rain, not heavy.	29.94	80.50	1 W.	B.C.		29.94	78	0	B.	
	—	—	0	O.D.		29.94	76	0	B.		29.94	76	0	B.C.	Cloudy round horizon, and to W.
	29.94	76	S.E.W.	O.		29.94	79	1 S.W.	B.C.		29.94	80	0	B.	
	29.94	77.50	1 S.W.	G.		29.94	78	0	B.C.		29.94	78	0	B.	
	29.94	80	S.E.W.	O.		29.94	76	1 W.	O.D.	Clouds about and a drizzling rain, not heavy; sun shining.	29.94	79.50	0	B.C.	Cloudy to N. and W. Rain between 4 and 5.30 p.m.
	29.94	77	S.W. by E.	B.C.		29.94	76	1 W.	G.		29.94	76	0	B.	
	29.94	77	S.E.W.	B.C.		29.94	78	1 S.W.	O.		29.94	77	0	B.	
	29.94	74	S.E.W.	O.		29.94	76.50	1 S.W.	G.	The sky though is clear to W.	29.94	76.50	0	B.	A beautiful sunset.
	29.94	76	1 S.W.	B.C.		29.94	78	0	B.C.		29.94	77	0	B.	
	29.94	77.50	S.E.W.	O.	High clouds.	29.94	79	S.E.W.	B.C.	A good many clouds; looks like looking up for rain.	29.94	79	0	B.	A beautiful clear moonlight night.
	29.94	78	S.E.W.	O.		29.94	77.50	1 W.	B.C.	Beautiful evening.	29.94	78	0	B.C.	
	29.94	79	S.E.W.	G.V.	Bright sunshine morning, with rain about 11.30.	29.94	78	S.E.W.	B.C.		29.94	78	0	B.C.	Slight rain this afternoon.
	29.94	80	S.E.W.	O.		29.94	79	1 S.W.	B.C.		29.94	77	0	B.	
	29.94	78	1 S.W.	O.		29.94	80	1 S.W.	B.C.		29.94	77	0	B.	Beautiful moonlight night
	29.94	77.50	1 S.W.	O.		29.94	80	S.E.	B.C.		29.94	77	0	B.C.	
	29.94	2,000.00	—	—		29.94	2,000.00	—	—		29.94	2,000	—	—	
	29.94	78.50	—	—		29.94	78.50	—	—		29.94	78.50	—	—	

METEOROLOGICAL OBSERVATIONS TAKEN AT BONA HINTERLAND, IN LAT. 9° 16' 8" N., AND LONG. 2° 59' 37" W.
August, 1898.

(To face p. 100.)

Date.	6 A.M.						12 NOON.					4 P.M.					6 P.M.				
	Barometer.	Thermometer.	Rainfall.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.
August 1	28.50	74	—	S.W.	G.		28.50	76	S.W.	H.C.		28.45	80.00	0	B.C.	Beautiful clear sky, with few clouds.	28.50	80.00	0	B.C.	
" 2	28.54	76	—	S.W. by S.	B.C.		28.50	76	S.W.	G.		28.46	76	0	G.V.	Rained a little about 3 p.m.	—	—	—	—	
" 3	28.52	74.50	4	S.W.	B.C.		28.50	76	S.W.	O.H.		28.43	76.80	0	B.C.		—	—	—	—	
" 4	28.55	75	0	S.W.	G.	Slight rain during the morning.	28.55	77	S.W.	U.		28.50	75.50	0	O.R.T.L.	Has been very heavy rain.	28.52	75	0	B.C.	
" 5	28.58	76.50	61	0	G.	Taken at 8.45 a.m. Slight drizzle at 8 a.m.	28.55	80	S.W.	B.C.		28.49	79	S.E.	G.	Wind from south-east. Looks threatening.	28.51	78	0	B.	
" 6	28.56	76	31	0	G.		28.48	79	S.W. by S.	H.C.		28.46	79	S.W. by E.	U.		28.49	79	0	B.C.	
ms	171.34	432	108	—	—		171.13	469	—	—		170.78	468.50	—	—		114.02	312.00	—	—	
Means	28.537	75.33	17.00	—	—		28.521	76.17	—	—		28.463	76.08	—	—		28.505	76.125	—	—	

Bona was evacuated on the morning of the 7th August, 1898.

METEOROLOGICAL OBSERVATIONS TAKEN AT WA HINTERLAND IN LAT. 10° 3' 54" N., AND LONG. 2° 27' 53" W.

(To face p. 100.)

September, 1898.

Date.	8 A.M.						12 NOON.						4 P.M.						8 P.M.					
	Baromet.	Thermometer.	Rainfall.	Wind.	Weather.	Remarks.	Baromet.	Thermometer.	Wind.	Weather.	Remarks.	Baromet.	Thermometer.	Wind.	Weather.	Remarks.	Baromet.	Thermometer.	Wind.	Weather.	Remarks.			
Sept. 1 ...	28.50	76	—	0	C.M.	Tornado during the night.	—	—	—	—	—	28.45	80	0	B.C.	—	28.47	81	0	B.	—			
" 2 ...	28.54	75	1	0	O.R.	—	28.54	78	1 W.	O.	—	28.43	77.50	0	C.	Dull weather.	28.45	78	0	B.	—			
" 3 ...	28.53	76.50	—	1 S.W.	G.	—	—	—	—	—	—	28.43	79	0	B.C.	—	—	—	—	—	—			
" 4 ...	28.51	76	24½	0	G.	—	28.50	77.50	0	O.R.	Began raining about 11.30 a.m.	28.40	79	1 E.	B.C.	Looks threatening.	28.41	78	0	B.C.	Beautiful clear night, with a few clouds.			
" 5 ...	28.46	75	60½	0	G.	—	28.43	76	1 S.W.	C.	—	28.34	79	0	O.R.	—	28.42	78	0	O.	—			
" 6 ...	28.45	75.50	½	1 S. by W.	O.D.	—	28.45	76	0	G.	—	28.34	78	0	C.	—	28.43	79	0	G.	—			
" 7 ...	28.49	76	—	1 S. by W.	G.	—	28.47	77	1 W.	B.C.	—	28.40	79	0	B.C.	—	28.46	80	0	B.C.	—			
" 8 ...	28.50	78	—	0	B.C.	—	28.47	79	1 S.W.	B.C.	Threatening weather.	28.41	78	0	U.	Tornado about 2 p.m. Not much rain here.	28.50	79	1 N.	B.C.	—			
" 9 ...	28.47	77	27½	1 W.	B.C.	—	28.45	78	1 S.W.	B.	—	28.36	81	0	R.T.L.	—	28.42	78	0	C.	—			
" 10 ...	28.41	76	3½	2 S.	G.	—	28.45	77	1 W.	G.	—	28.29	78	0	G.	—	28.40	78	0	B.	—			
" 11 ...	28.50	77	1½	0	G.	Rain during the night.	28.48	79	1 E.	B.C.	—	28.42	79	0	C.	—	28.47	78	0	B.	—			
" 12 ...	28.54	76	1	0	C.	—	28.50	77	1 S.W.	B.C.	—	28.39	79.50	0	B.C.	—	28.40	78	0	B.C.	Slight rain during the night.			
" 13 ...	28.50	78	—	0	B.C.	—	28.46	80	1 S. by W.	B.C.	—	28.40	81.50	1 S.W.	B.C.	—	28.44	82	0	B.	—			
" 14 ...	28.48	78	—	0	B.	—	28.47	80.50	1 S.W.	B.C.	—	28.38	82	0	U.T.	Rain to N. and N.W. threatening since 2 p.m.	28.44	81.50	0	B.C.	—			
" 15 ...	28.49	79	—	0	B.C.	—	28.46	81	1 W.	B.C.	Thunder, lightning, and rain. Very slight, about 1.45 p.m. to 2.15 p.m.	28.40	78	1 N.E.	O.	—	28.49	78	0	B.C.	—			
" 16 ...	28.50	76	—	1 S.	B.C.	—	28.51	76.50	1 S.W.	B.C.	—	28.44	81	0	B.C.	—	28.53	81	0	B.C.L.	Taken at 9.30 p.m.			
" 17 ...	28.57	74	1	2 N.E.	O.R.	—	28.53	75.50	0	O.	About 10 a.m. the barometer was 28.50, and thermometer 75°. Rain.	28.45	77	1 W.	B.C.	—	28.45	77	0	B.	—			
" 18 ...	28.52	76	1½	1 S.W.	B.	—	—	—	—	—	—	28.42	80.50	0	B.	—	28.46	81.50	0	B.	—			
" 19 ...	28.50	78	—	1 S.W.	B.	—	28.48	79.50	1 S.S.W.	B.	—	28.42	82	0	B.	—	28.47	81	0	B.L.T.	—			
" 20 ...	28.52	78	57½	1 N. by E.	B.C.	—	28.49	81	1 S.S.W.	B.C.	—	28.40	82	1 W.	U.T.	Tornado, and ugly appearance of weather to N. and N.W.	28.47	80	0	O.L.	—			
" 21 ...	28.52	78	½	1 S.	O.D.	—	28.49	78.50	1 W.	C.	—	28.42	79.50	0	U.	—	28.48	79	0	C.	—			
" 22 ...	28.55	77.50	5½	0	O.D.	—	28.49	79	1 S.W.	U.	Taken at 12.50 p.m.	28.46	80.50	0	Q.R.T.	—	28.50	78	0	B.C.	—			
" 23 ...	28.56	76	82½	0	O.D.	At 10 a.m. barometer 28.50, thermometer 75°. Rain falling.	28.52	74	0	O.	—	28.46	78.50	0	O.	—	28.50	78	0	B.	—			
" 24 ...	28.53	75	2½	1 N.W.	B.	—	28.49	78	0	B.C.	—	28.42	81	1 S.W.	B.C.	—	28.47	80	0	B.C.D.	Slight rain and thunder during the night.			
" 25 ...	28.53	77	19½	0	B.	—	28.51	79.50	1 S.S.W.	B.C.T.	—	28.43	78	0	O.D.	—	28.53	77	0	C.	—			
" 26 ...	28.55	76	2½	1 S.W.	B.	—	28.51	79	1 S.S.E.	B.C.	—	28.45	81	0	B.	—	28.49	80	0	B.	Rained during the night.			
" 27 ...	28.57	77	0	1 E.	B.C.	Slight rain during morning.	28.52	79	0	B.	—	—	—	—	—	—	28.52	81	0	B.L.C.	—			
" 28 ...	28.56	77.50	15½	0	B.	—	28.51	80	1 S.W.	B.	Tornado about 11.45 p.m. Barometer 28.52. Thermometer 80°.	28.46	77	0	O.R.	—	28.51	77	0	B.C.	—			
" 29 ...	28.52	77	0	0	B.C.	—	28.48	78.50	0	B.C.	—	28.49	81	0	B.C.	—	28.46	81	0	B.C.	—			
" 30 ...	28.51	78.50	9½	2 S.	G.V.	—	28.48	79	1 S.	G.U.	—	28.42	81	0	B.C.	—	28.43	81	0	B.	—			
Sums	855.37	2,300.50	300.275	—	—	—	760.14	2,117	—	—	—	824.04	2,308.50	—	—	—	825.42	2,300	—	—	—			
Means	28.51	76.68	9.908	—	—	—	28.486	78.40	—	—	—	28.41	79.5	—	—	—	28.4	79.27	—	—	—			

METEOROLOGICAL OBSERVATIONS TAKEN AT WA HINTERLAND IN LAT. 10° 3' 54" N., AND LONG. 3° 27' 53" W.

(To Jan p. 103.)

October, 1898.

Date.	8 A.M.						12 NOON.					4 P.M.					8 P.M.				
	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	
October 1	29.51	76	25	1 W.E.	O.	29.50	76	0	G.		29.44	76	0	R.		29.45	76	0	R.		
" 2	29.50	75	3	1 W.	R.O.	29.51	77	1 E.	G.D.		29.45	76	0	R.O.		29.47	76	0	R.		
" 3	29.54	77	25	2 E.	R.O.	29.52	78	1 E.	R.C.D.		29.45	76	0	R.O.		29.48	76	0	R.		
" 4	29.53	76	0	0	R.O.	29.50	76	0	R.O.		29.44	61	0	R.O.	About 6.30 p.m. there was lightning, thunder, rain, &c.	29.49	61	0	U.		
" 5	29.50	79	0	1 W.	R.	29.49	61	0	R.O.		29.49	55	0	R.O.		29.49	55	1 W.	R.O.T.L.	Tornado to E.W. or W.	
" 6	29.50	79	0	1 E.W.	R.O.	29.48	79.00	0	G.		29.44	61	0	R.O.T.		29.49	79	0	C.		
" 7	29.50	77	3	0	R.O.	29.44	77.00	0	R.O.	Tornado about.	29.45	79	0	U.		29.49	79	0	C.		
" 8	29.54	78	1	0	R.	29.49	80	0	R.O.		29.45	80	2 E.	U.T.R.		29.49	81	0	R.	Slight rain about 6.30 p.m.	
" 9	29.50	79.00	0	0	R.	29.48	81	0	R.		29.45	80	0	R.O.		29.49	80	0	R.		
" 10	29.52	80	3	0	C.	29.49	80	0	R.		29.41	84	0	R.O.		29.49	80	1 E.	C.R.		
" 11	—	—	0	—	—	29.48	81.00	2 E.	R.O.	Foggy clouds.	29.42	80	0	R.		29.49	80	0	R.		
" 12	29.51	79.00	0	2 E.	O.	29.47	86	1 E. by W.	R.O.	Wind variable.	29.42	80.00	1 E.W.	R.O.		29.49	85.00	0	R.		
" 13	29.51	81	0	0	R.	29.45	86	0	R.O.		29.39	84	1 W.	R.	Lightning and rain to E.W. about 5-6 p.m.	29.49	84	0	R.O.		
" 14	29.51	81	0	1 E.	R.	29.45	85.00	0	R.O.	Foggy clouds.	29.41	80.00	0	R.O.		29.49	80	0	R.		
" 15	29.51	83	0	1 E. by W.	C.	29.40	83.00	1 E.	C.U.	Looks threatening.	29.42	84	0	U.		29.49	81	0	U.		
" 16	29.51	81	0	1 W. by E.	R.O.	29.40	83.75	0	R.O.		29.43	80	0	R.		29.49	86	1 E.	R.		
" 17	29.51	81.00	0	1 E.S.W.	R.	29.40	84	1 E.	R.O.		29.39	80	0	R.O.T.		29.49	84.00	0	R.L.		
" 18	29.52	86	0	0	R.	29.45	84	0	R.O.	Taken at 8.40 a.m.	29.38	85.00	1 E.	U.	Tornado about.	29.44	84	0	R.		
" 19	29.52	81	0	0	R.	29.45	86	0	R.		29.42	86	0	R.		29.42	86	0	R.	Lightning, thunder, and rain during the night.	
" 20	29.50	80	1	0	R.	—	—	—	—		29.36	80	1 E.	R.		29.40	84	0	R.		
" 21	29.47	79	0	0	R.	29.42	84	0	R.		29.35	84.00	0	R.		29.40	84	0	R.		
" 22	—	—	0	—	—	29.45	84	1 E.W.	R.		29.34	80	0	R.		29.41	84	0	R.		
" 23	29.44	80	75	1 E.E.	C.	—	—	—	—	Rain about 9 a.m.	29.34	84.00	0	R.		29.41	84	1 E.	R.		
" 24	29.49	79	10	0	R.	29.41	81	1 E.W.	R.O.		29.34	80	0	R.		29.40	81	0	R.L.		
" 25	29.49	79	85	0	C.	29.41	80	1 E.	U.		29.30	80	0	U.		29.40	79	0	C.R.		
" 26	29.48	76	60	0	C.	29.44	79	0	R.O.		29.30	79	1 W.E.	C.R.	Belated during the night.	29.40	79.00	0	C.		
" 27	29.51	76	0	0	C.R.	29.40	77.00	0	G.		29.40	76	0	G.		29.40	79.00	0	R.		
" 28	29.50	75.00	75	1 E.	R.O.	29.47	76.00	0	R.O.		29.45	77.00	0	C.R.		29.40	76	0	R.O.		
" 29	29.54	76	0	0	R.	29.41	79	1 E.	R.O.		29.45	81	1 E.	R.		29.41	80	0	R.		
" 30	29.50	76	0	1 E.	R.	29.47	80	2 E.	R.O.		29.41	80	0	R.		29.45	86	0	R.		
" 31	29.46	80	0	1 W.	R.	29.44	80	0	R.O.		—	—	—	—		29.44	80	0	C.L.	There were dark clouds to E.W., E.W., N., and E., and lightning.	
Sum	29.47	2,500	110	—	—	29.49	2,500.00	—	—		29.44	2,497	—	—		29.49	2,500.0	—	—		
Mean	29.50	29.50	2.50	—	—	29.47	81.04	—	—		29.40	82.00	—	—		29.49	82.21	—	—		

METEOROLOGICAL OBSERVATIONS TAKEN AT WA HINTERLAND IN LAT. 10° 8' 54" N., AND LONG. 3° 37' 53" W.

(To face p. 103.)

November, 1898.

Date.	8 A.M.						12 NOON.						4 P.M.						8 P.M.					
	Barometer.	Thermometer.	Relative.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.			
November 1	30.40	80	—	1 E.	R.	Taken about 9 a.m.	30.41	80	1 E.	R.		30.36	84	1 E.	R.C.	Thunder about 5 p.m.	30.41	83.50	0	R.				
" 2	30.44	80.50	—	1 E.	R.		30.42	83	1 E.	R.C.		30.36	84.50	1 E.E.	R.		30.42	84	0	R.				
" 3	30.40	81	—	0	R.		—	—	—	—		30.37	84	1 E.E.	R.		30.44	80	0	R.C.				
" 4	30.38	81	—	0	R.		30.44	80	0	R.C.		30.38	84	1 E.	R.		30.45	80	0	R.				
" 5	30.44	81.50	—	1 E.W.	R.C.		30.45	83	0	R.C.		30.38	85.50	0	R.C.		30.46	80	0	R.				
" 6	30.45	82	—	0	R.C.		30.45	83.50	0	R.		30.37	84	0	R.		30.44	84	0	R.				
" 7	30.49	82	—	1 E.	R.H.		30.45	84	0	R.C.		30.36	86	0	R.		30.44	85	0	R.				
" 8	30.45	83	—	1 E.W.	R.H.		30.45	84	0	R.C.		30.36	84	0	R.		30.45	85	0	R.				
" 9	30.45	83.50	—	1 E.E.	R.H.		30.41	84.50	0	R.	30.37	86	0	R.	30.44		85	0	R.					
" 10	30.46	84	—	0	R.		30.41	85.50	0	R.	—	—	—	—	30.44		84.50	0	R.					
" 11	30.45	85	—	0	R.		30.41	86.50	1 E.	R.	30.36	86.50	1 E.	R.	30.42		86	0	R.					
" 12	30.45	86	—	1 E.	R.		30.40	86	S E.	R.	30.35	86	0	R.	30.45		84	0	R.					
" 13	30.46	84.50	—	1 E.	R.		30.41	86	1 E.E.	R.	30.35	85	S E.	R.	30.44		84.50	0	R.					
" 14	—	—	—	—	—		—	—	—	—	30.35	87	0	R.	30.45		85	0	R.					
" 15	30.44	86	—	1 E.	R.		30.39	84.50	1 E.E.	R.C.	30.35	85	0	R.	30.45		84	0	R.					
" 16	30.45	86	—	1 E.	R.H.		30.39	84	S E.	R.	30.35	85.50	1 E.E.	R.C.	30.45		84	0	R.					
" 17	30.49	86	—	1 E.	R.H.		30.38	86	0	R.H.	About 1 p.m. a wind, S E., was blowing.	30.31	85	1 E. by E.	R.H.		30.45	84	0	R.				
" 18	30.49	86	—	1 W.	R.H.	30.38	85	1 E.	R.C.H.	30.35		84	0	R.	30.45		86	0	R.					
" 19	30.41	79	—	0	R.H.	30.38	83	1 E.E.	R.H.	30.34		84	0	R.	30.41		84	0	R.					
" 20	30.45	81	—	0	R.H.	30.45	84	1 E.	R.H.	30.35		85.50	1 E.E.	R.H.	30.44		86	0	R.					
" 21	30.45	80	—	0	R.H.	30.49	84	1 E.	R.H.	30.37		86.50	1 E.E.	R.H.	30.44		84	0	R.					
" 22	30.44	80	—	0	R.H.	30.41	86	1 E.	R.H.	30.36		86	1 E.	R.H.	30.45		84	0	R.					
Sum	307.30	1,700	—	—	—	307.15	1,697.50	—	—	306.39		1,704	—	—	306.39		1,697.50	—	—					
Mean	30.44	81.25	—	—	—	30.425	80.475	—	—	30.36	84.500	—	—	30.45	84.45		—	—						

METEOROLOGICAL OBSERVATIONS TAKEN AT WA HINTERLAND IN LAT. 10° 8' 54" N., AND LONG. 3° 27' 53" W.

(70 Ann p. 102.)

December, 1898.

Date.	8 A.M.					Remarks.	12 NOON.					Remarks.	4 P.M.					Remarks.	8 P.M.					Remarks.
	Barometer.	Thermometer.	Wind.	Weather.			Barometer.	Thermometer.	Wind.	Weather.			Barometer.	Thermometer.	Wind.	Weather.			Barometer.	Thermometer.	Wind.	Weather.		
December 1	29.54	79	0	S.W.	B.M.		29.59	82.50	1 E.	B.M.			29.52	80	1 N.	B.M.			29.54	80	0	B.		
" 2	29.52	80	0	0	B.M.		29.55	80	1 N.	B.M.			29.50	80	1 N.	B.M.			29.54	80	0	B.		
" 3	29.50	79	0	0	B.M.		29.41	85	S.W.E.	B.M.			29.50	80	1 N.E.	B.M.			29.41	85.50	0	B.		
" 4	29.50	79	0	1 N.E.	B.M.		29.44	80	1 N.N.E.	B.M.			29.50	85	0	B.M.			29.50	85	0	B.		
" 5	29.50	79	0	1 N.E.	B.M.		29.47	80	S.W.E.	B.M.			29.50	84.50	1 N.N.E.	B.M.			29.50	85	0	B.		
" 6	29.50	79	0	1 N.	B.M.		29.50	82.50	S.W.E.	B.M.			29.50	85	1 N.	B.C.M.			29.50	85	0	B.		
" 7	29.51	85	0	0	B.M.		29.55	84	S.W.E.	B.M.			29.57	87	1 N.	B.M.			29.54	85	0	B.		
" 8	29.47	84	0	0	B.M.		29.44	85	0	B.M.			—	—	—	—			29.44	85.50	0	B.		
" 9	29.50	81	0	0	B.M.		29.47	80	1 N.	B.M.			29.41	80	1 N.	B.V.			29.55	80	0	B.		
" 10	29.54	77	0	0	B.M.		29.50	79.50	1 N.	B.M.			29.41	80.50	0	B.M.			29.55	84	0	B.		
" 11	29.50	77.50	0	0	B.M.		29.50	80	0	B.M.			29.50	85	0	B.M.			29.50	80	0	B.		
" 12	29.50	79	0	1 S.W.	B.M.		29.44	81.50	1 N.	B.M.			29.50	85.50	0	B.M.			29.52	85.50	0	B.L.		
" 13	29.45	81.50	0	0	B.M.		29.45	84	0	B.C.M.			29.50	87	S.W.	B.C.M.	Lightning and thunder between 4 and 6 p.m. Very heavy on the horizon.		29.50	85	1 N.	C.L.T.		
" 14	29.47	79	0	1 N.	B.	Strong wind from N.N.E. during morning, and the sky overcast and dull.	29.44	79.50	S.W.E.	B.C.M.			29.50	81.50	S.W.N.E.	B.C.M.			29.50	80	1 N.	B.M.		
" 15	29.45	76	0	S.W.N.E.	B.		29.44	79	S.W.E.	B.M.			29.50	81.50	0	B.M.			29.50	80	0	B.		
" 16	29.50	79	0	S.W.N.E.	B.M.		29.44	80	S.W.E.	B.M.			29.50	80.50	S.W.N.E.	B.M.			29.50	81.50	0	B.		
" 17	29.50	79	0	S.W.	B.M.		29.45	79.50	S.W.E.	B.M.			29.57	85	0	B.M.			29.55	85	0	B.		
" 18	29.52	74	0	S.W.N.E.	B.M.		29.45	79	S.W.N.E.	B.M.			29.50	81.50	1 N.	B.M.			29.47	80	0	B.		
" 19	29.50	79	0	S.W.E.	B.M.		29.45	79	1 N.	B.M.			29.57	85	0	B.M.			29.50	85	0	B.		
" 20	29.50	79	0	0	B.M.		—	—	—	—			29.50	80	0	B.M.			29.55	85	0	B.		
" 21	29.50	79	0	0	B.M.		29.44	81.50	0	B.M.			29.50	84	1 N.	B.M.			29.55	85	0	B.		
" 22	29.50	79	0	1 N.E.	B.M.		29.45	82	1 E.	B.M.			29.50	80	1 N.E.	B.M.			29.55	85	0	B.		
" 23	29.50	79.50	0	0	B.M.		29.51	82	0	B.M.			29.44	80	1 N.E.	B.M.			29.51	84	0	B.		
" 24	29.50	79	0	S.W.N.E.	B.M.		29.50	84	S.W.E.	B.M.			29.50	85	S.W.N.E.	B.M.			29.50	85	0	B.		
" 25	29.50	79	0	1 N.E.	B.M.		29.50	80.50	S.W.E.	B.M.			—	—	—	—			29.50	84	0	B.		
" 26	29.50	77	0	1 N.E.	B.M.		29.50	84	S.W.E.	B.M.			29.52	80	S.W.E.	B.M.			29.50	84	0	B.		
" 27	29.54	77	0	S.W.E.	B.M.		29.50	85	S.W.E.	B.M.			29.52	80.50	S.W.E.	B.M.			29.55	85	0	B.		
" 28	29.57	74	0	S.W.E.	B.M.		29.54	80	S.W.E.	B.M.			29.50	80.50	1 N.E.	B.M.			29.50	81	0	B.		
" 29	29.50	74	0	S.W.E.	B.M.		29.57	79	S.W.E.	B.M.			29.50	85	1 N.E.	B.M.			29.50	79	0	B.		
" 30	29.51	74	0	S.W.N.E.	B.M.		29.50	79	S.W.E.	B.M.			29.50	81	S.W.N.E.	B.M.			29.54	80	0	B.		
" 31	29.50	79	0	1 N.E.	B.M.		29.52	79	S.W.E.	B.M.			29.55	85	S.W.E.	B.M.			29.50	80	0	B.		
Sum	294.52	2,597.42	—	—	—		294.74	2,490	—	—			295.00	2,420.50	—	—			294.90	2,400	—	—		
Mean	29.51	77.50	—	—	—		29.57	81.57	—	—			29.50	82.50	—	—			29.57	82.57	—	—		

METEOROLOGICAL OBSERVATIONS TAKEN AT WA HINTERLAND IN LAT. 10° 8' 54" N., AND LONG. 2° 27' 53" W. 1

(70 Jan p. 103.)

January, 1899.

Date.	8 A.M.						12 NOON.					4 P.M.				Remarks.	8 P.M.				
	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.	Barometer.	Thermometer.	Wind.	Weather.	Remarks.		Barometer.	Thermometer.	Wind.	Weather.	Remarks.
January 1	29.95	70	—	S.N.E.	R.N.	Taken at 8.00 a.m.	29.95	70	1 N.E.	R.N.	Taken at 12.00 p.m.	29.95	61	1 N.E.	R.N.	Taken at 4.00 p.m.	29.95	61	0	R.	
" 2	29.95	74	—	1 N.E.	R.N.		29.95	69	S.N.N.E.	R.N.		29.95	62	1 N.E.	R.N.		29.95	—	—	—	
" 3	29.95	74	—	S.N.N.E.	R.N.		29.95	69	S.N.E.	R.N.		29.95	62	1 N.E.	R.N.		29.95	61	0	R.	
" 4	29.95	74	—	S.N.E.	R.N.		29.95	70	S.N.N.E.	R.N.		29.95	62	1 N.E.	R.N.		29.95	61	0	R.	
" 5	29.95	74.50	—	1 N.E.	R.N.		29.97	69	1 N.E.	R.N.		29.95	62	0	R.N.		29.95	60	0	R.	
" 6	29.95	70	—	S.N.E.	R.N.	Taken at 12.00 p.m.	29.97	69.50	S.N.E.	R.N.	Very cold; strong wind.	29.95	29.95	0	R.N.		29.95	60	0	R.	
" 7	29.95	70	—	S.N.E.	R.N.		29.95	61	S.N.E.	R.N.		29.95	64	0	R.N.		29.95	59	0	R.	
" 8	29.95	70	—	S.N.E.	R.N.		29.95	70.50	1 N.E.	R.N.		29.95	61	1 N.E.	R.N.		29.97	62	0	R.	
" 9	29.95	70	—	S.N.E.	R.N.		29.95	70.50	S.N.E.	R.N.		29.95	61	1 N.N.E.	R.N.		29.95	61	0	R.	
" 10	29.97	70	—	1 N.	R.N.		29.95	70	S.N.	R.N.		29.95	62	0	R.N.		29.95	62	0	R.	
" 11	29.95	70	—	1 N.E.	R.N.		29.95	70.50	S.N.	R.N.		29.95	64	S.N.E.	R.N.		29.95	62.50	0	R.	
" 12	29.95	70	—	1 N.	R.N.		29.95	69.50	S.N.E.	R.N.		29.95	64	S.N. by E.	R.N.		29.95	62.50	0	R.	
" 13	29.95	74	—	S.N.	R.N.		29.95	61	S.N.E.	R.N.		29.95	64	S.N.E.	R.N.		29.95	62	0	R.	
" 14	29.95	74.50	—	S.N.E.	R.N.		29.95	70	S.N.E.	R.N.		29.95	62.50	S.N.E.	R.N.		29.95	61	0	R.	
" 15	29.95	71.50	—	S.N.E.	R.N.		29.95	70	S.N.E.	R.C.N.		29.95	70	S.N.E.	R.C.N.		29.95	70.50	0	G.	
" 16	29.95	70	—	S.N.E.	G.N.		29.97	77	S.N.	R.N.		29.95	60	S.N.E.	R.C.N.		29.95	70	0	R.	
" 17	29.95	70	—	1 N.E.	R.N.		29.97	70	1 N.	R.N.		29.95	70	0	R.N.		29.95	69	0	R.	
" 18	29.95	74	—	0	G.N.		29.95	77	1 N.E.	R.N.		29.95	60	0	R.N.		29.95	61	0	R.	
" 19	29.95	70	—	1 N.E.	R.N.		29.95	70.50	0	R.N.		29.95	60	0	R.N.		29.95	60	0	R.	
" 20	29.95	77	—	0	G.N.		29.95	61	0	G.N.		29.97	60	0	G.N.		29.95	60	0	R.	
Sum	29.95	1,000.00	—	—	—		29.95	1,000.00	—	—		29.97	1,000	—	—		29.95	1,000.00	—	—	
Mean	29.95	74.50	—	—	—		29.95	70.170	—	—		29.95	62.50	—	—		29.95	61.40	—	—	

G. VINCENT R. WRIGHT,
Capt., S. Waia Boréwara.

Wa, 20th February, 1899.

APPENDIX B.

HINTS TO OFFICERS PROCEEDING TO THE NORTHERN TERRITORIES.

The uniform of officers of the Constabulary is fixed by regulation, and the following hints in this respect are intended for special service officers alone:—Khaki jacket and breeches, former with turn-down collar. Drill for hot weather, serge for cold. Khaki puttees. Leather leggings. Brown lace boots. Wolsley helmet. Regulation waterproof cloak. Saddlery as for infantry officer, but plain bridle and bits. Hunting spurs. Sam Browne belts with brown leather sword-knot. Revolver. Ebonite water-bottle. Compass. Uniform.

Flannel suits, thin flannel suits and pyjamas, cholera belts, thin flannel or merino drawers, socks that do not shrink, soft felt hat, cloth cap, brown lace boots, camp shoes, sweater. Muff.

Bed, to be well off ground, two blankets, waterproof sheet of Willesden canvas, mosquito net. Table and chair. Good lamp to burn kerosine oil. Galvanised-iron bath (to be obtained on the Coast). Berkefeld filter (with three spare candles). Mincing machine. Cooking pots (preferably of aluminium). Enamelled-iron cups, plates, and dishes, and wash-basin. Large white umbrella. Table cloths and napkins. Small leather roll of carpenter's tools. Clothes' pegs for tent pole, small size. Kitchen knife, fork, and spoon, and ditto for own use. Teapot with insulated handle, preferably of aluminium. Hair clippers are useful. Camp kit

Shot gun very useful. Sizes of shot most useful—No. 6, No. 4, and B. Fishing-rod also useful. Gut and gimp are useless. For big fish in Volta 80 yards strong line, and thin copper wire for cast are required. Rifle useful for big game, but, if Constabulary carbine is used, only necessary to take out .308 sporting bullets. A butterfly net and skinning gear are useful, as is also a camera. With the latter films, done up in air-tight cases, each containing only a few, should be taken. Sport

The Administration provides a full ration on repayment, and extra stores most in favour are bottled or tinned fruits and vegetables, sardines, jams, whisky, wine, chutney, Worcester sauce, curry powder, baking powder, mustard, soups (Maggi's consommé and Lasenby's squares were found to be the best and most portable). A good housewife with an ample stock of cotton, thread, buttons, buckles, laces, and pins is indispensable. Stores.

(F:60)

Vegetable seeds in air-tight cases come in very handy. Tobacco must also be taken in soldered tins. Rangoon oil, strong string, dubbin, boot-paste, French nails, measuring tape, flint and steel, copper wire gauze for larder, medicated paper, extra sponges and tooth brushes, soap (both toilet and washing), and candles, are conducive to comfort.

Boxes

Clothes should be packed in air-tight uniform cases, to weigh when full about 66 lbs.

APPENDIX F.

CONVENTION AND DECLARATION BETWEEN GREAT BRITAIN AND GERMANY OF NOVEMBER 14TH, 1899.

Article V.

In the neutral zone the frontier between the German and English territories shall be formed by the River Daka as far as the point of its intersection with the 9th degree of north latitude, thence the frontier shall continue to the north, leaving Morogugu to Great Britain, and shall be fixed on the spot by a mixed Commission of the two Powers in such manner that Gambaga and all the territories of Mamprui shall fall to Great Britain, and that Yendi and all the territories of Ohakou shall fall to Germany.

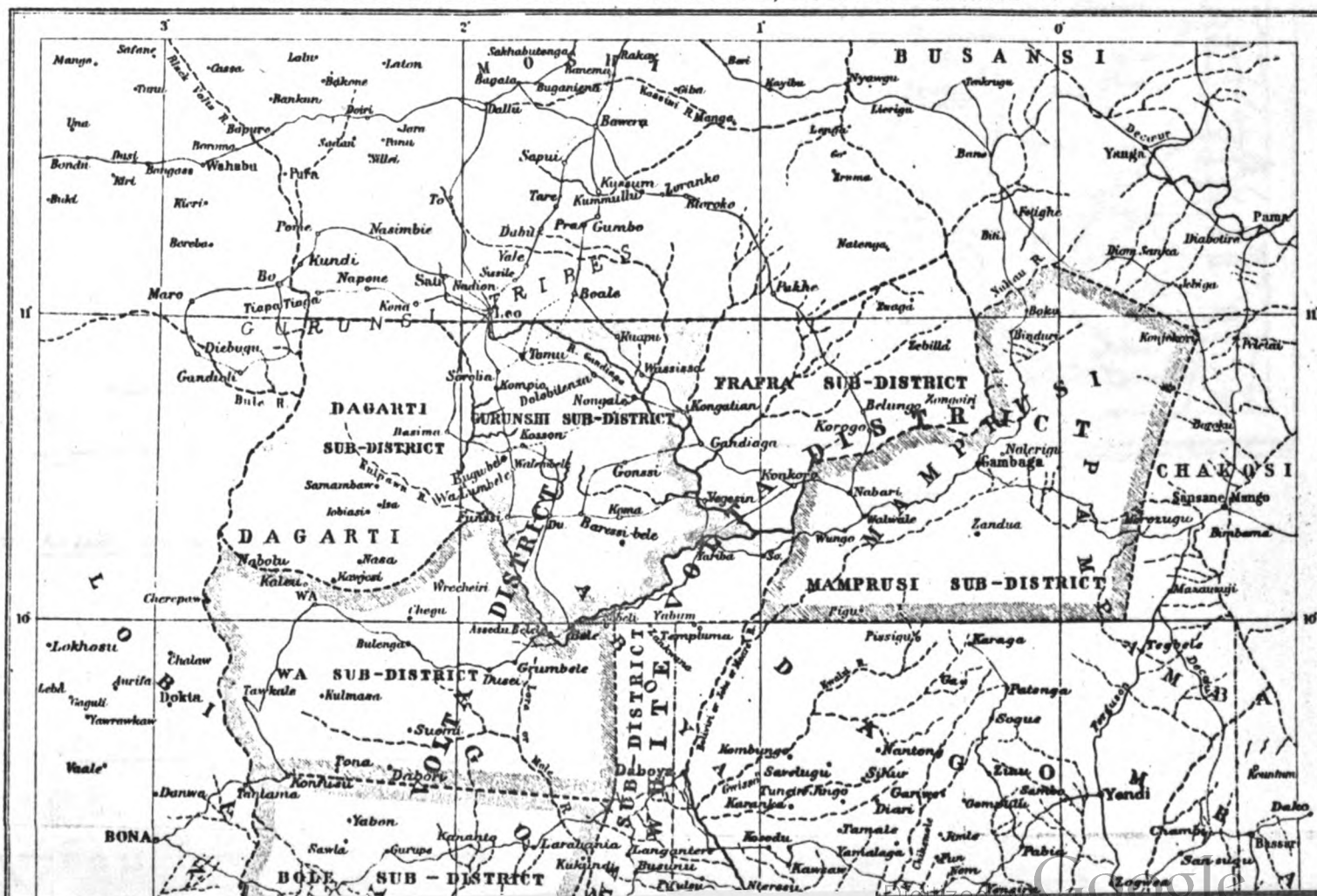
Article VI.

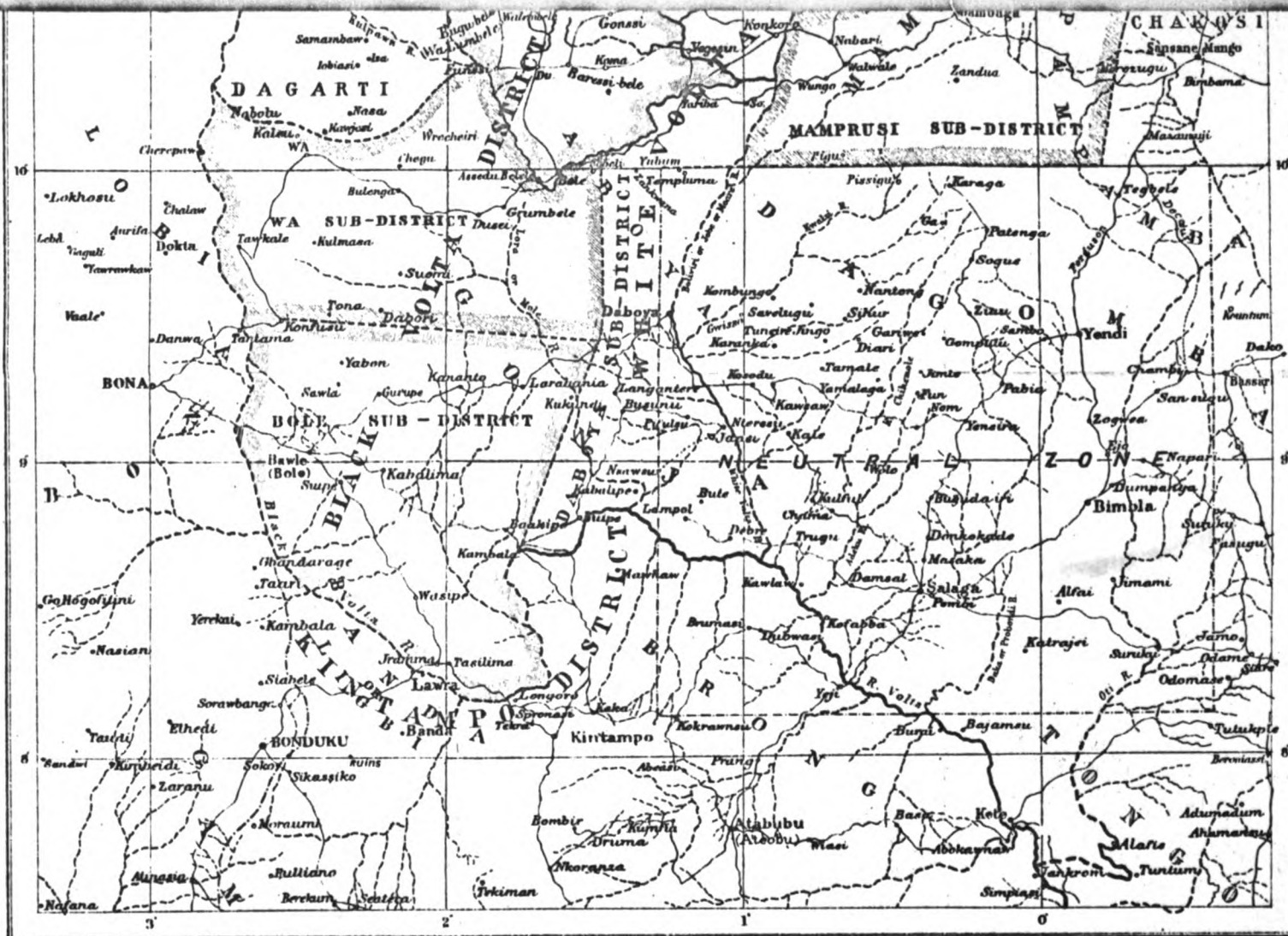
Germany is prepared to take into consideration, as much and as far as possible, the wishes which the Government of Great Britain may express with regard to the development of the reciprocal Tariffs in the territories of Togo and of the Gold Coast.

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(Wk. 18514 125 10 | 00—H & S 5800) P 00
1050

NORTHERN TERRITORIES, GOLD COAST.





10 W 0 N 144 R

Scale 1893.555 or 1 inch to 30 Miles

Lithographed the Intell Div. W. O. October 1893.

NOTE. For Eastern Boundary as defined by Anglo-German Convention, Nov. 4th 1893, v. Appendix F.

11

L966.703 G786r



3 5556 012 143 855

afr
L966.703
G786r



L966.703 G786r



3 5556 012 143 855

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